FEBRUARY 22, 1960

# PAPER TRADE JOURNAL

**Japan's New Pulp and Paper Mills Make Effective Use of Hardwoods**

**Paperboard Men Discuss Important Felt Facts With Experts**

**Care In Operation Insures Long Service from Modern Pulpstones**

**Various Factors Show Growth of Paper Industry for 1960**

Paper sculpture by Giuseppe Baggi
Pulp
from
Gottesman
means...
SOMETHING SPECIAL!
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Bleached, Semi-Bleached, and Unbleached Kraft
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## ...all types for all purposes

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Philadelphia 29, Pa.
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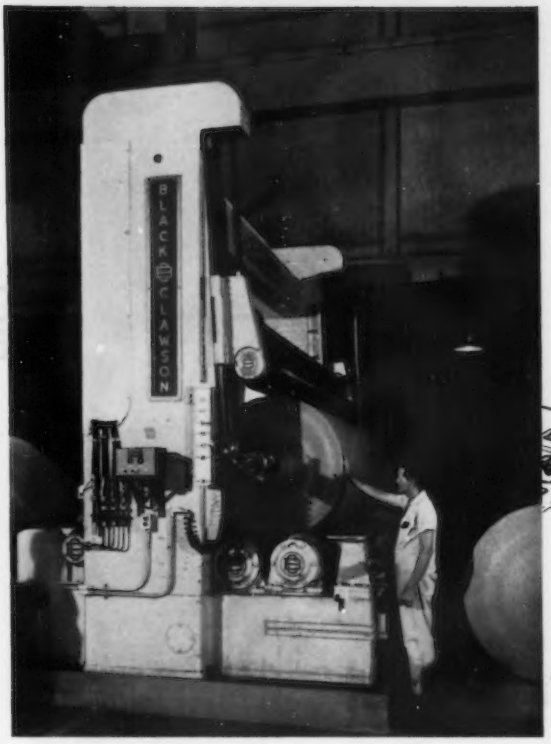
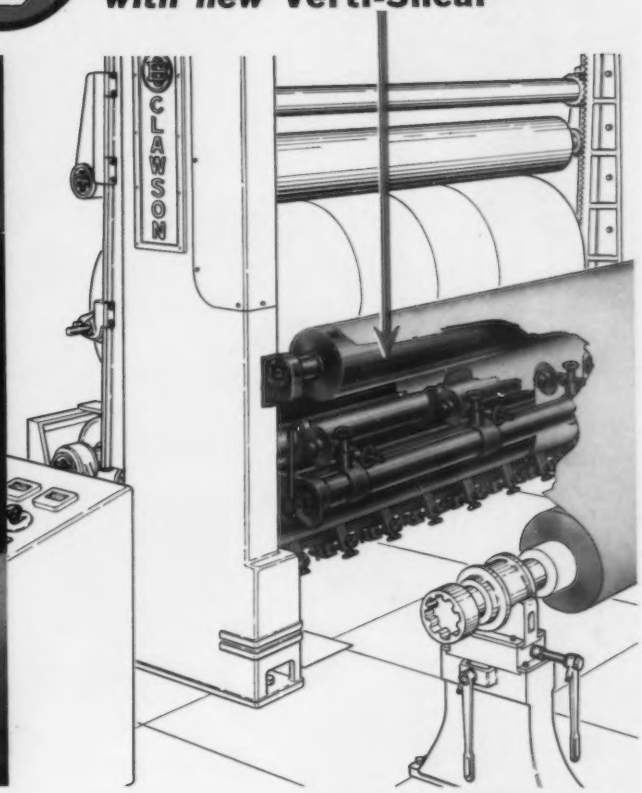
Valleyfield, Quebec

## *Hi-Speed* Rollflyte Winders *with new* Verti-Shear*




*Verti-Shear... a new vertical slitting method designed to make Rollflyte winders more productive and easier to operate, has several obvious advantages.

- Shorter draw from point of slit to point of wind
- Slitters and adjustable spreader bar are readily accessible to the operator
- Minimum downtime for maintenance
- Standard commercial parts—bearings, sprockets, air cylinders, etc.

Rollflyte mill winders have heavy box framing that dampens vibration and adds stability. Rotating members are properly sized for minimum deflection and balanced for speeds in excess of operating speeds.

These modern winders can be equipped with roll ejector, air-operated rewind shaft, lowering table, rewind shaft core holder and puller, control console and constant tension control.

Furnished in eight sizes with rewind capacities from 48″ to 84″ dia., trim width to suit your machine. Write for Bulletin 23-DM

**The Black-Clawson Company**
**Slitter-Winder Dept., Fulton, N. Y.**

***Another Advanced Engineering Design***

**BLACK-CLAWSON**

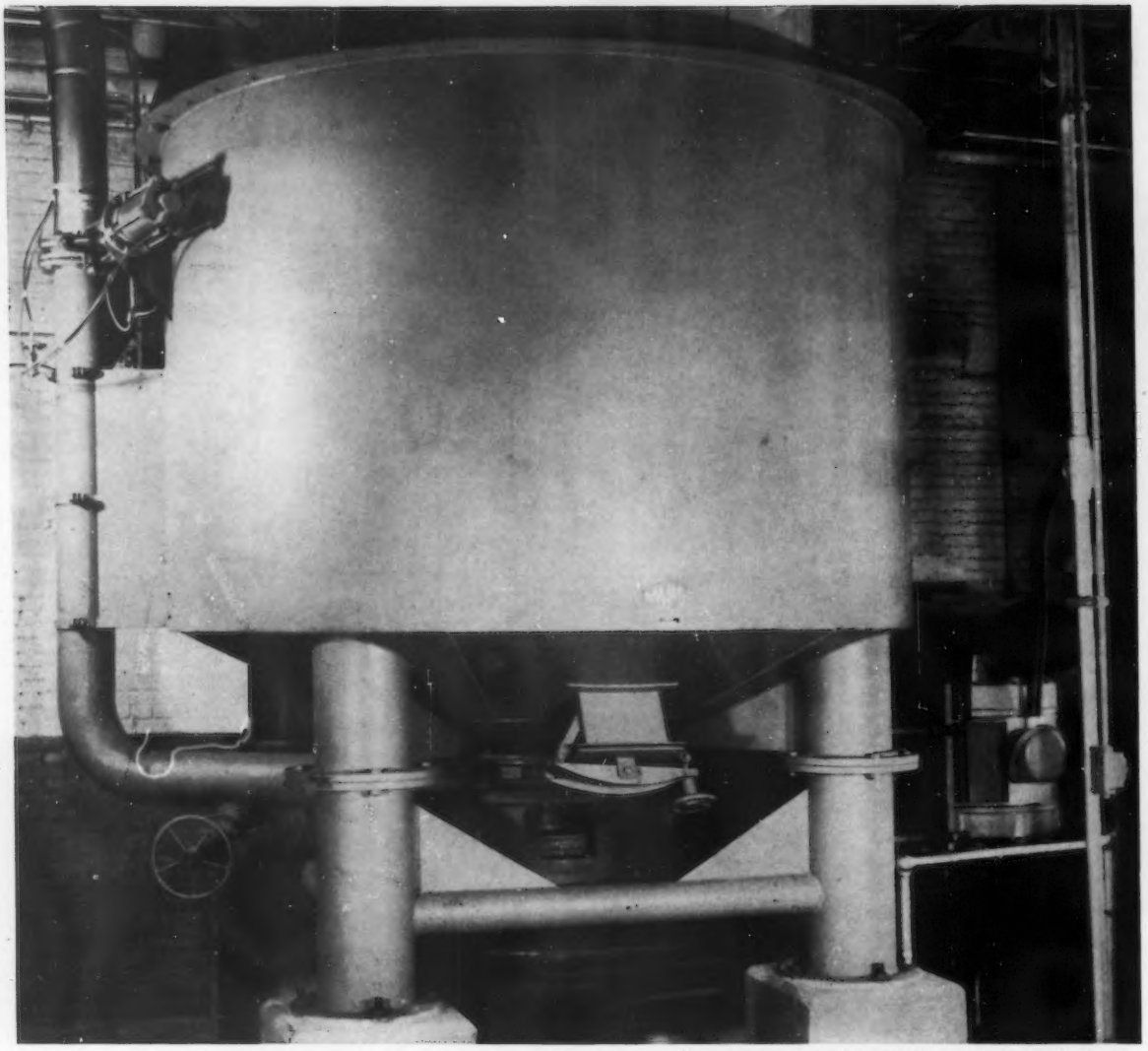


*Photo courtesy Waterfalls Tissue Corp., Mechanic Falls, Maine*

# NEW SOLVO PULPER
## AT WATERFALLS TISSUE CORPORATION
## PULPING LEDGER STOCK

**QUALITY — SPOT FREE**
**CONSISTENCY — 6.5% B. D.**
**TIME — FIFTEEN MINUTES**

**SIMILAR PERFORMANCES ARE OBTAINED ON WET STRENGTH TISSUE BROKE, HARD WHITE SHAVINGS AND TABULATING CARDS**

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**NASHUA, NEW HAMPSHIRE**

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# PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

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Associate Editor

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Associate Editor

HARRY L. DYER
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K. E. PATTERSON
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L. HAMEL
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## REMEMBER THESE DATES

**May 23-25. TAPPI Coating Conference, Edgewater Beach Hotel, Chicago, Ill.**

**June 14-16. TAPPI Bleaching Conference, Edgewater Beach Hotel, Chicago, Ill.**

**June 7-9. PIMA National Meeting, St. Francis Hotel, San Francisco, Calif.**


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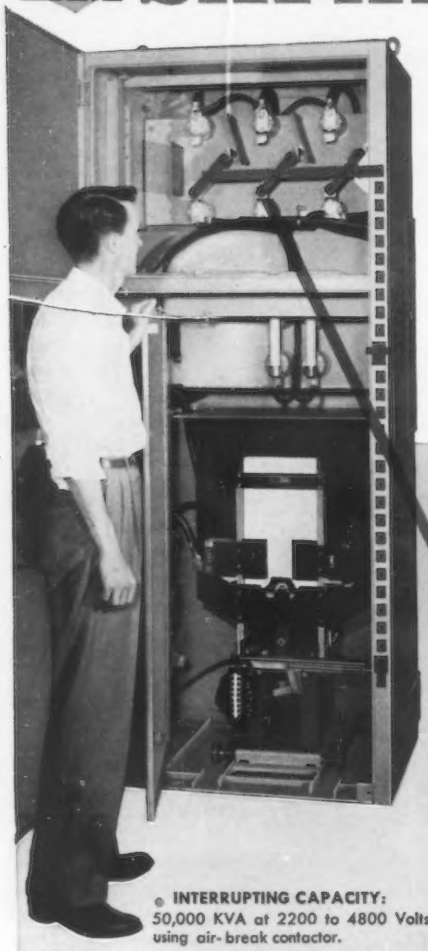
*For those who think twice about*

# TWO E-M MOTOR CONTROL LINES

## E-M SAFAIR Magnetic Control (NEMA CLASS E-1)

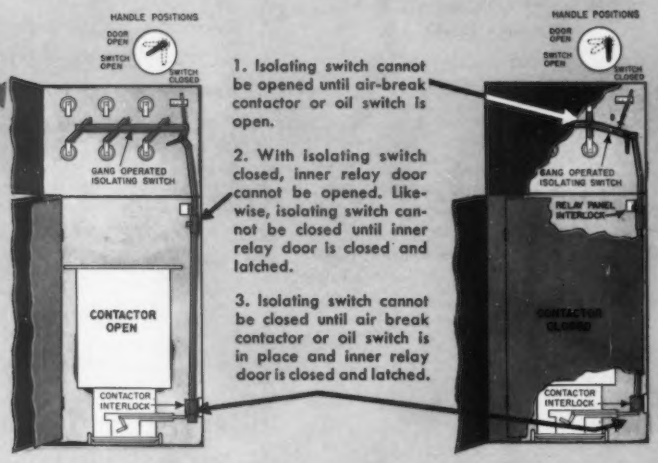


● **INTERRUPTING CAPACITY:** 50,000 KVA at 2200 to 4800 Volts, using air-break contactor.

### *Compare these features with those of your present controls*

1. **Complete Personnel Safety** with a foolproof system of mechanical interlocking between gang-operated isolating switch, oil switch or air-break contactor, and compartment doors.
2. **Complete Motor And Control Protection.** Skillfully engineered and applied components are carefully coordinated to protect both motor and control over complete design range of overload and fault conditions.

**You can't make a mistake with the E-M Mechanical Interlock!**

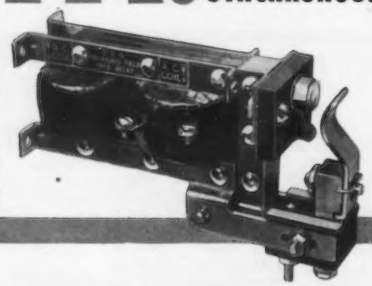



1. Isolating switch cannot be opened until air-break contactor or oil switch is open.
2. With isolating switch closed, inner relay door cannot be opened. Likewise, isolating switch cannot be closed until inner relay door is closed and latched.
3. Isolating switch cannot be closed until air break contactor or oil switch is in place and inner relay door is closed and latched.

**E-M SAFETY-GANG ISOLATING SWITCH** of SAFAIR Control is externally operated, internally interlocked as detailed in color and diagrams above, right.

SAFAIR features a 50,000 kva (NEMA Class E-1 maximum rating) air-break contactor suitable for repetitive motor starting and rapid switching in a complete line of squirrel-cage and wound-rotor induction motor controls and synchronous motor controls.

## PFR *for Simple, Reliable SYNCHRONOUS MOTOR CONTROL



Safair- and Safuse-controlled synchronous motors pull into step smoothly and powerfully every time. E-M-invented *Polarized Field Frequency Relay system of synchronous motor

3300-TPA-2189

**ELECTRIC MACHINERY**

*Originators of the safety-gang*

*their men and motors...*

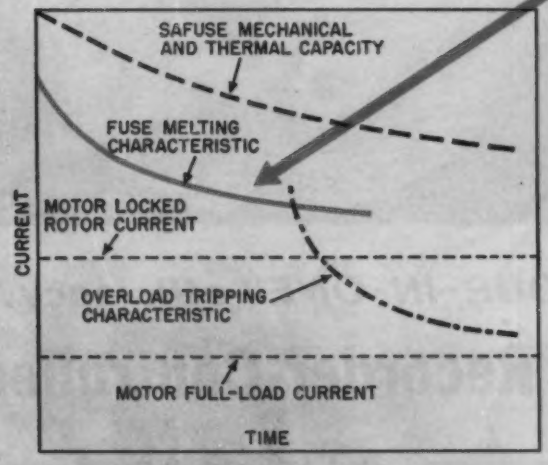
# OFFER COMPLETE PROTECTION!

## E-M SAFUSE Magnetic Control (NEMA CLASS E-2)

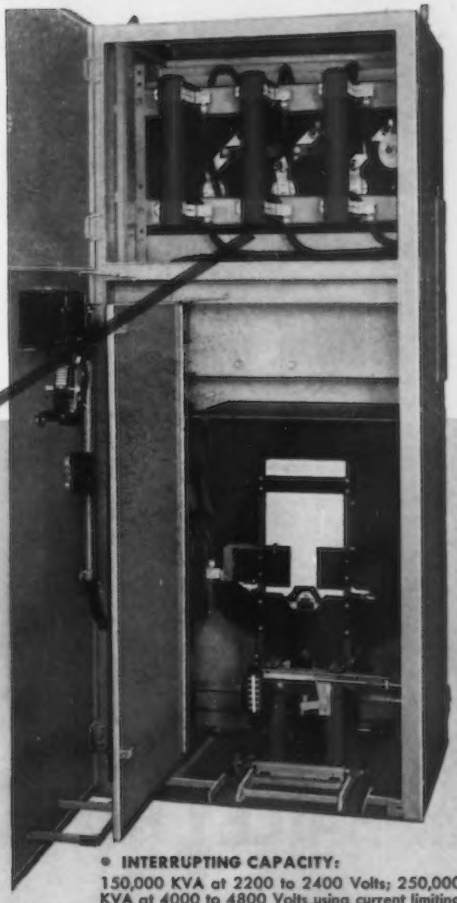
3. **Complete Front Accessibility.** Controls may be placed in rows, back-to-back or back-to-wall—no access required to back or sides.

4. **Complete Space Utilization.** Imaginative E-M engineering has provided a highly compact control design without compromise on safety or performance, and with provision to accommodate modifications.

5. **Complete Modification Line.** You can tailor the control to fit your exacting requirements—nearly 100 options and special features available.




starting and synchronizing is sensitive to the electrical condition of the field winding, applying field excitation at proper rotor angle for maximum synchronizing torque with minimum current inrush . . . and it's coupled with E-M's modern field failure protective system.



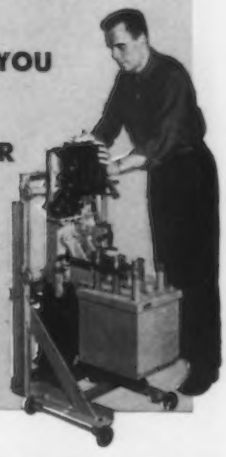
• **INTERRUPTING CAPACITY:** 150,000 KVA at 2200 to 2400 Volts; 250,000 KVA at 4000 to 4800 Volts, using current limiting fuses with air-break contactor or oil switch.

**FAST ACTING FUSES** *plus* E-M Safety-Gang Isolating Switch in SAFUSE are the best possible combination for complete motor and control protection thru NEMA Class E-2 maximum ratings. The current limiting fuses provide short circuit protection and are carefully coordinated with overload relays as shown in diagram above.

Complete information and helpful application data are available from your E-M Field Engineer. Call him and write the factory for publications 242A and 249.

### SAFUSE GIVES YOU CHOICE OF AIR-BREAK CONTACTOR OR OIL SWITCH

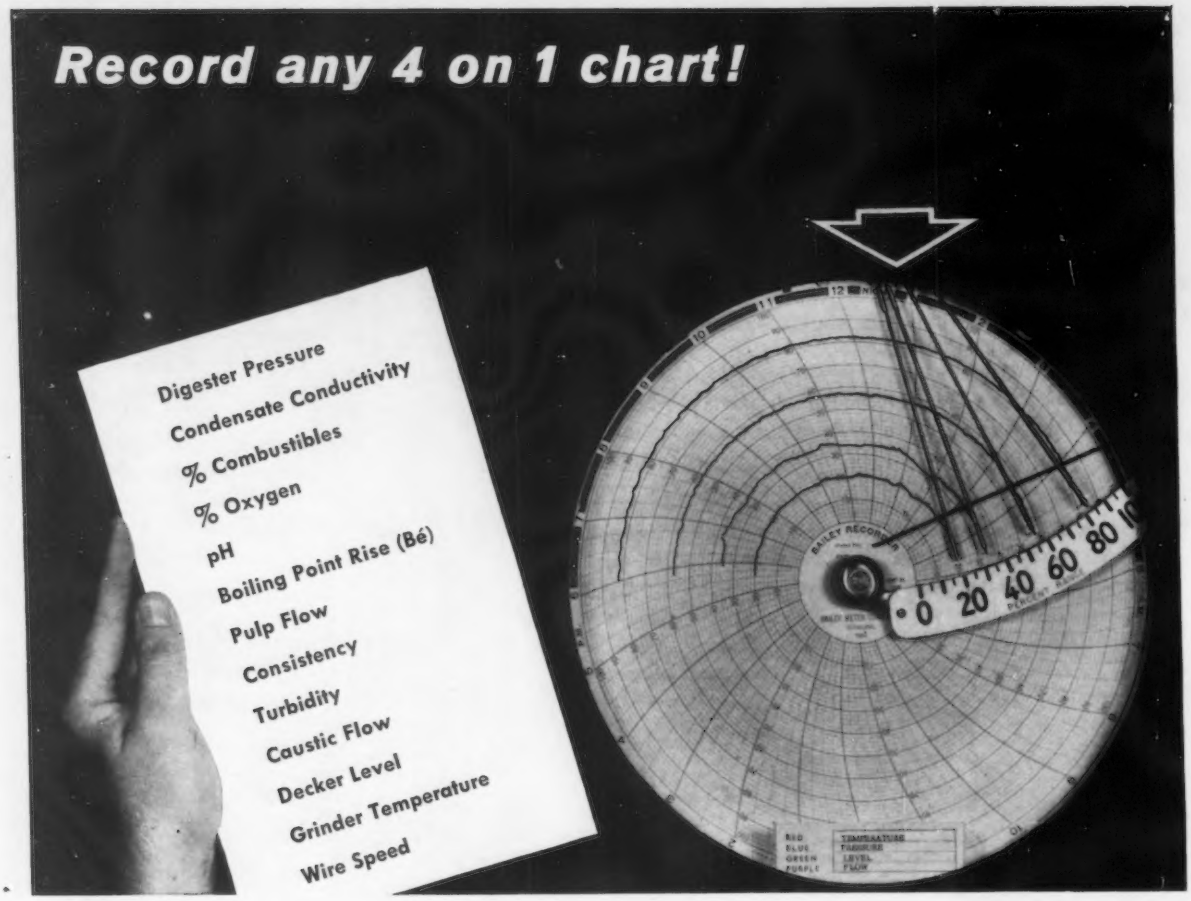
For highly repetitive duty use the roll-out air break contactor. But for less frequent starting—or in areas of severe dust, dirt, moisture, or corrosive fumes—the roll-out oil switch is recommended.



**MFG. COMPANY** MINNEAPOLIS 13, MINNESOTA

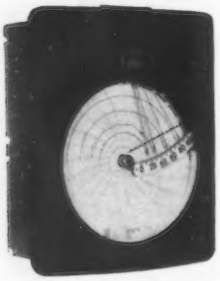
*disconnect high-voltage fused control*

# Record any 4 on 1 chart!




## To give your operation "FOUR-IN-ONE" efficiency...

# The BAILEY Receiver Recorder-Controller!



Records four variables on one chart.

You can lower the cost of your equipment investment and increase the efficiency of your entire operation with the Bailey Receiver Recorder.

**HERE'S HOW**

The interchangeable components for the Recorder make it fast, inexpensive, and automatic to do up to *four* measuring jobs at the same time with either or both pneumatic and electric systems.

This Bailey unit continuously and simultaneously records four variables on the same chart. And, they are *in the same linear scale measurement.* You have clear, easy-to-read records for continual analysis and control.

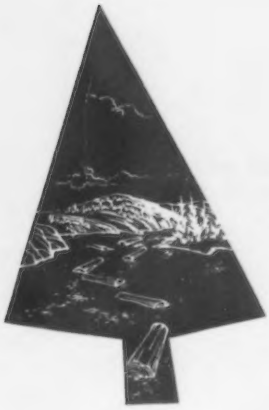
Plug-in, pre-calibrated receivers can easily be adapted on-the-job to revised process requirements. The Bailey Receiver Recorder saves you money with a minimum instrument investment for process cycle expansion or alteration. Let your local Bailey engineer suggest applications to fit your operation. Or write for specific control systems information for your entire plant operation. P44-1

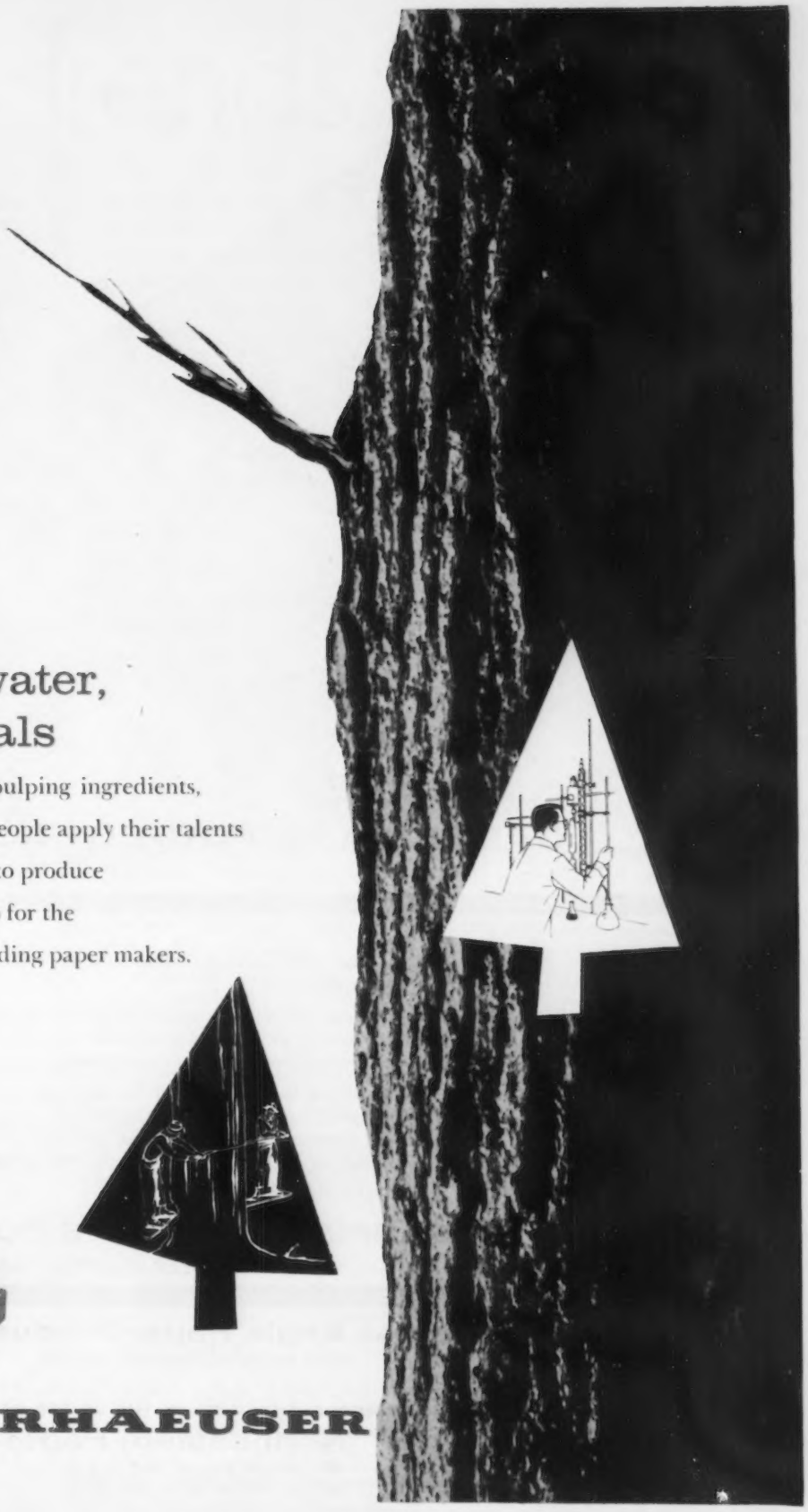
*Instruments and controls for power and process*

**BAILEY METER COMPANY**

*PAPER AND PULP DIV., 1056 IVANHOE ROAD, CLEVELAND 10, OHIO*

In Canada—Bailey Meter Company Limited, Montreal







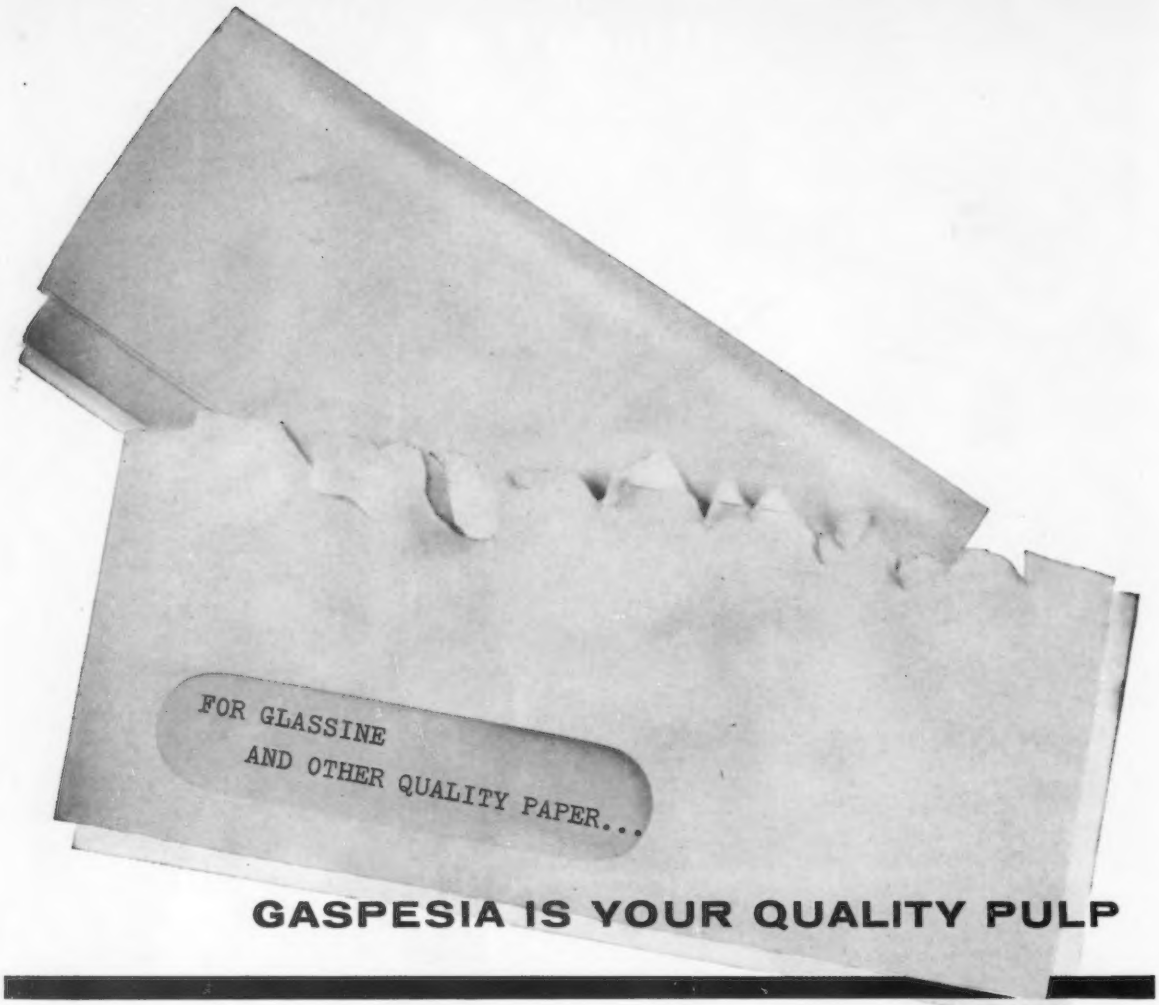


## wood, water, chemicals

To these basic pulping ingredients, Weyerhaeuser people apply their talents and experience to produce top quality pulp for the nation's outstanding paper makers.

PULP DIVISION

**WEYERHAEUSER**




# GASPESIA IS YOUR QUALITY PULP

Did you know that Gaspesia makes pulp for letterhead and envelope stock as well as glassine windows?

For envelopes and letterheads, *Gaspesia Standard* is your quality pulp. For quality windows or any other glassine use, it's *Gaspesia Glassine*. Make Gaspesia the sole source for your sulphite requirements.

Location on the Gaspé Coast, within easy reach of waterways to the whole world, affords low-cost water transportation to every market. Shipping time to Europe is about half that from the Pacific Coast. Transcontinental rail systems speedily deliver carload quantities to United States and Canadian markets.

Have you tried Gaspesia?

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**Northeastern Paper Sales, Inc.**
400 Madison Avenue, New York 17, N. Y.
20 North Wacker Drive, Chicago 6, Ill.

# Trends

**Folding Boxes Off in January**

Shipments of folding cartons in January reached the lowest level in three and one-half years, according to the Folding Paper Box Ass'n. of America. Dollar volume of shipments fell 6.1% behind January of last year and tonnage was off 7.3%. The decline was felt by plants in all sections of the country except the South, which registered a 2% increase in volume. The eastern area declined a full 10% from year-ago levels. New orders were also lagging behind January of 1959, with dollar volume off six-tenths of 1% and tonnage down 3.3%.

**Corrugated Boxes Ahead in January**

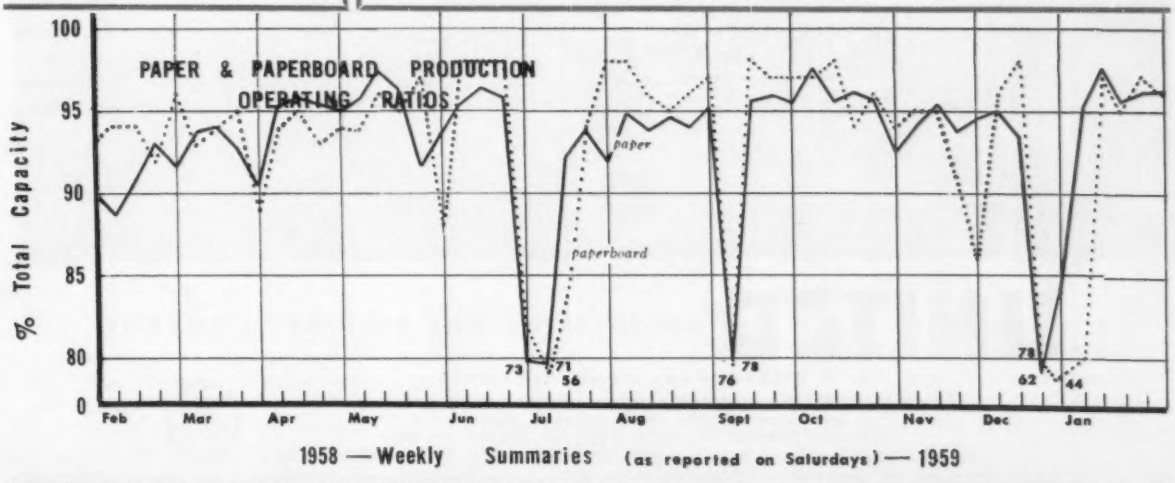
Corrugated box shipments in January of this year ran 1% ahead of January 1959 in spite of the fact that there was one less (4%) working day.

**Business Forms Make Marked Gain**

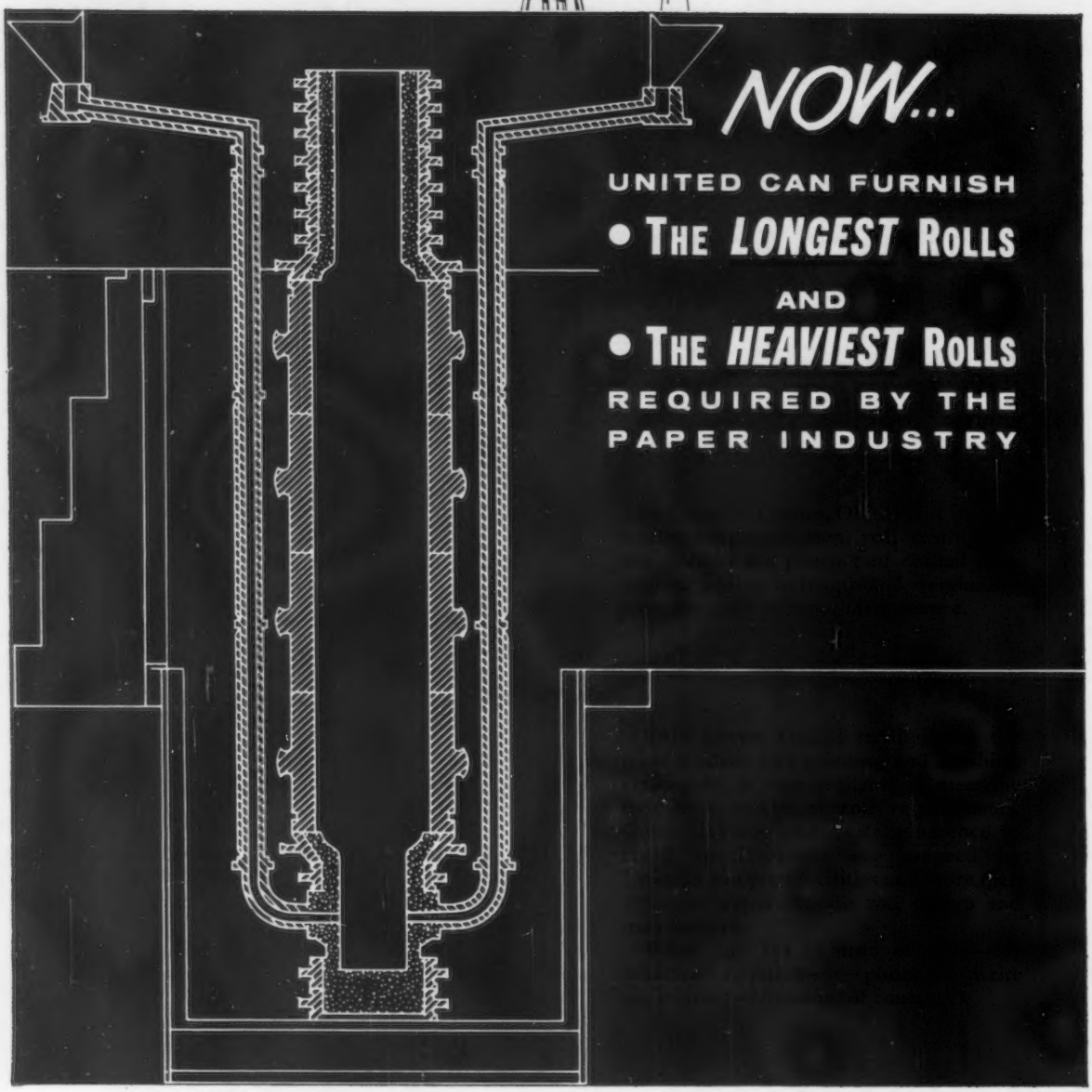
A gain of 14% in dollar volume of sales of business forms in 1959 over 1958 is reported by the Business Forms Institute. A $400 million sales total for the past year is assured by the industry which hit a $350 million total in both 1957 and 1958. Steady growth has been shown by the industry which had sales totals of 308 million in 1956; 276 million in 1955, and 232 million in 1954.

**SKF Economic Planner Warns Against Forecasts**

The business and industry user of forecasts today faces a new problem trying to distinguish fact from fancy among the current flood of predictions, said A. G. Abramson, director of economic planning, SKF Industries, Inc. "Anyone who can speak or write or send up smoke signals can make a forecast and usually does," declared the top forecaster for the ball and roller bearing manufacturer. Dr. Abramson, who is also president of the National Ass'n. of Business Economists, said the deluge of forecasts is further complicated by the fact that "the 'experts' may be wrong or may disagree."



# UNITED® PAPER MILL ROLLS



## NOW...

UNITED CAN FURNISH

- THE *LONGEST* ROLLS

AND

- THE *HEAVIEST* ROLLS

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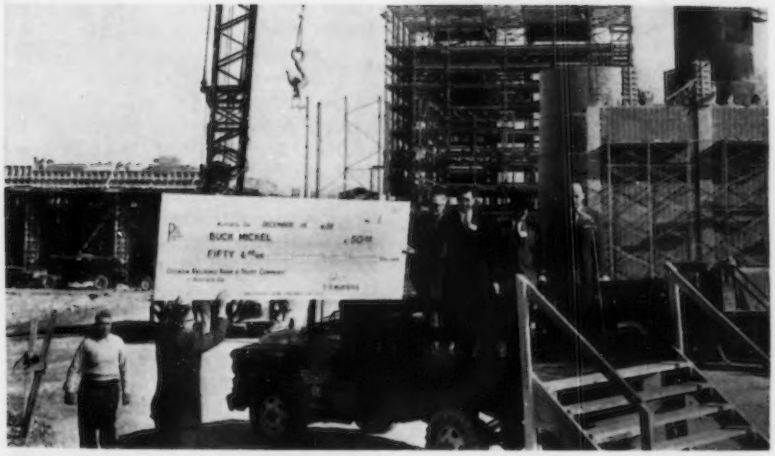
PAPER TRADE JOURNAL

WEEK OF FEBRUARY 22, 1960




GIGANTIC WOODEN CHECK, written by C. S. Huestis, general manager of bleached board development for Continental Can Co. (wearing hat on truck), in payment of a $50 bet with Buck Mickels, vice president and general manager, Daniel Construction Co. (extreme right on truck), is hoisted aloft on appointed day of on-schedule completion of Continental's $45 million paperboard plant south of Augusta, Ga. Mickel bet Huestis his company could start erection of the paper machine on schedule. It looked like a losing bet, but he won. Check's hoisting touched off barbecue celebration attended by city and county officials, and 1166 construction workers engaged on the job. Plant initiates Continental's entry into manufacture of bleached paper and paperboard to be converted into cartons, plates, cups, etc., at other company plants.

## Wood Flong to Expand Hoosick Falls Facilities

Wood Flong Corp. of Hoosick Falls, N. Y., manufacturer of a product widely used in the printing industry, has announced a $1 million expansion program to double its production capacity.

Thornton Hall, corporation president, said the company had decided to expand its present facilities in Hoosick Falls, Rensselaer County, rather than build a second mill in the western part of the United States.

The program will include renovation of the corporation's buildings and replacement of old machinery. Most of the expansion will be completed by September.

The corporation is the world's largest manufacturer of dry stereotype matrix paper, the president said.

## Missouri Ozarks Seeks To Attract Paper Mills

Paper manufacturers from throughout the United States and Canada will be invited to a meeting at Montauk state park May 15 by a legislative committee seeking to obtain paper mills for the Missouri Ozarks.

Rep. W. T. Bollinger, Jr., of Van Buren and Sen. Richard Ichord of Houston, Democratic members of the joint legislative committee, said Gov. James T. Blair would preside.

Representative Bollinger said a timber survey will show a supply of hardwood sufficient to run a dozen paper mills for many years.

Montauk Park is located a few miles south of Salem, in Dent County.

Governor Blair has long been interested in trying to secure paper mills for Missouri. He has expressed the opinion that they would be highly beneficial to the state's economy.

## CIP Acquires Hendershot Paper Products

Canadian International Paper Co. revealed it is the principal in the current offer for control of Hendershot Paper Products, Ltd., of Burlington, Ont., and announced purchase of the majority of that company's outstanding common shares and share warrants.

## Abitibi Purchases Pembroke Shook Mills

Abitibi Power & Paper Co. announces the purchase of the entire capital stock of Pembroke Shook Mills, Ltd., Pembroke, Ont., from Canadian Canners, Ltd., of Hamilton, Ont. Pembroke Shook Mills, Ltd., operates a modern corrugated box plant and a large wood shook plant.

Pembroke Shook Mills is also holder of extensive forest limits in the Pembroke forest district.

## Paper and Paper Board Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending February 6, 1960, at 96.2 per cent compared with 95.7 per cent, revised for the preceding week. The ratio was 90.1 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending February 6, 1960, at 96 per cent, compared with 97 per cent for the preceding week and 93 per cent for the corresponding week a year ago.

*(Detailed statistics on page 51)*

# Introductory and Refresher Courses To Be Offered by University of Maine

The University of Maine is offering this summer an Institute for the pulp and paper industry. The Institute is offered primarily to broaden the technical and management training of key personnel that they may be more valuable members of the company organization. This will be done through basic introductory courses, refresher work, and discussion of new developments in the classes, laboratories, and on field trips. It is a prime opportunity for pulp and paper companies, as well as those in allied industries, to send some of their men for this training. The material to be presented will prove in valuable to both the men who attend the Institute and their companies.

Two three-week programs will be offered, one in July, the other in August. Persons may enroll for either or both of these sessions.

### The First Program —Pulp, July 11-29

**PA 1s PULP TECHNOLOGY THEORY**

- History and Introduction
- Structure of Wood
- Cellulose, Hemicellulose and Derivatives
- Liknin
- Wood Preparation
- Alkaline Pulping
- Acid Sulphite Pulping
- Semi-Chemical Pulping
- Chemical Recovery
- Bleaching
- Mechanical Pulping
- Pulp Mill Management (Interspersed)

**PA 2s PULP MANUFACTURE AND TESTING**

- Wood Preparation
- Alkaline Pulping
- Acid Sulphite Pulping
- Pulp Testing
- Bleaching
- Pulp Mill Visits (Interspersed)

Pa 2as Instrumentation—alternate for Pa 2s above. This course will treat techniques employed for the control of process variables, control theory, and the application of automatic control methods. It is designed particularly for those who have already had some laboratory training and may, therefore, feel that the class work in instrumentation would be of greater value than the laboratory course in Pulp Manufacture and Testing. A student may enroll for either Pa 2s or Pa 2as, but will not be able to take both courses, since the instruction in both will be given at the same time.

### The Second Program —Paper, August 1-19

**PA 3s PAPER TECHNOLOGY THEORY**

- Stock Preparation
- Internal Sizing
- Beater Additives
- Fillers and Loading
- Paper Coloring
- Fourdrinier Machines
  - Wet End
  - Presses
  - Driers
- Calenders, Reels, and Drives
- Paper Making Felts
- Paper Making Wires
- Cylinder Machines
- Surface Sizing
- Paper Coating
- Paper Board
- Converting
- Printing
- Paper Testing
- Paper Mill Management (Interspersed)

**PA 4s PAPER MANUFACTURE AND TESTING**

- Fibre Identification
- Stock Preparation
- Internal Sizing
- Fillers and Loading
- Paper Coloring
- Fourdrinier Machine Operation
- Cylinder Machine Operation
- Paper Coating
- Paper Mill Visits (Interspersed)

Pa 4as Instrumentation (alternate for Pa 4s above)—This course will treat techniques employed for the control of process variables, control theory, and the application of automatic control methods. It is designed particularly for those who have already had some laboratory training and may, therefore, feel that the class work in instrumentation would be of greater value than the laboratory course in Paper Manufacture and Testing. A student may enroll for either Pa 4s or Pa 4as, but will not be able to take both courses, since the instruction in both will be given at the same time. The maximum number which can be enrolled in laboratory courses Pa 2s and Pa 4s is 30.

### Class Work

All classes with the exception of field trips will be held in Aubert Hall Monday through Friday, 8:00-12:00 and 1:30-5:00. One or more trips will be made each week to a pulp or paper mill. A certificate signed by the president of the University of Maine and the president of The University of Main Pulp and Paper Foundation will be presented at a luncheon the last day of each program to each person who satisfactorily completes the program.

### Staff

An exceptionally able staff has been secured for this Institute. In addition to some of the regular resident instructors of pulp and paper subjects at the University of Maine, five visiting staff members, each an authority on certain phases of pulp and paper manufacture, will give instruction in their special fields. These include head of the pulp and paper departments of the other four universities giving courses for our industry, and the vice president of the Institute of Paper Chemistry. To bring the students in touch with broad management policy as well as consideration of manufacture, organization, and personnel, one or more directors of The University of Maine Pulp and Paper Foundation will be invited to address the class each week. Plans are also being made to have visiting lecturers from industry speak on subjects in which they are specialists.

## Diamond National Adopts New Corporate Symbol

Diamond National Corp. has adopted a new corporate emblem: two diamonds with a stylized tree between them. Diamond National Corp. was formed last fall, when Diamond Gardner Corp. merged with The United States Printing & Lithograph Co.

The company's new symbol was evolved from its traditional diamond design, made world-famous by Diamond matches for more than three-quarters of a century.

# PAPER PEOPLE

E. H. Shriver

J. C. Redd

## Mead Announces Organizational Changes

Ellsworth H. Shriver has been named assistant director of product planning for The Mead Corp. Dr. Shriver, who was manager of product research at the Mead Research Center prior to this promotion, will continue to have his office in Chillicothe, Ohio, but will report to John D. Davis, director of the corporation's product planning department.

In his new position Dr. Shriver will be responsible for planning and directing the search and evaluation of ideas for new basic material-type products and for the investigation of other materials for potential improvement possibilities. A Mead employee since 1950, he is a 1942 chemical engineering graduate of Ohio State University. In 1948 and 1950, respectively, he received his M.S. and Ph.D. degrees in paper chemistry from the Institute of Paper Chemistry at Appleton, Wis.

Organizational changes made at the Research Center have resulted in the promotion of three men to positions of greater responsibility.

John C. Redd has been named director, research and development; Henry G. Caldwell has been appointed director of corporate technical service; and Charles H. Schneider is the new research administrator.

Dr. Redd, in his new position, will be responsible for the technical aspects of product development and improvement, process improvement, discovery of new knowledge, and reports of research findings. He joined Mead in 1942, has been associated with Mead's Research and Development Laboratories in various capacities and was director of new products research prior to this promotion. Dr. Redd was graduated from the University of Arizona with a B.S. Degree in chemistry in 1937, received his Master's Degree from the same University in 1938 and was awarded his Doctorate from the Institute of Paper Chemistry in 1942.

Mr. Caldwell, as director of corporate technical service, heads a newly created function designed to provide improved technical service to the operational divisions of the corporation on matters of quality and process control, cost reduction, and other operating problems.

Mr. Caldwell has been associated with Mead in its Research and Development Laboratories in Chillicothe since 1946. He is a graduate of Ohio State University where he received his Bachelor's Degree in chemical engineering in 1941 and a Master's Degree in 1942.

Dr. Schneider, in his new capacity as research administrator, will be responsible for the coordination of non-technical functions of the Mead Research Center. Specifically, he will process all of the day-to-day administrative mechanics involved in conducting research according to project concept. Mr. Schneider was a Mead research chemist for five years prior to this promotion. He is a 1942 graduate of the University of Delaware. He received his Master of Science Degree and Doctorate in physical chemistry from Lehigh University in 1953 and 1955, respectively.

H. G. Caldwell

C. H. Schneider

## Avevado Joins Allied Paper Engineering Staff

Manuel Avevado has been named staff engineer of the Allied Paper Corp. and will be directly responsible for installation and maintenance of instrumentation for King, Monarch and Byrant Mill division. Mr. Avevado, a mechanical engineering graduate of Clarkston College of Technology, formerly was instrumentation engineer for the W. R. Grace Co.

## Fraser Companies Elect Directors

Fraser Companies, Ltd., Edmundston, N. B., has announced that E. R. Alexander and K. W. Matheson, were recently elected directors of the company.

Mr. Alexander is vice-president, finance, and director of the Sun Life Assurance Co. He is also a director of Lord Simcoe Hotel, Ltd., and other companies.

Mr. Matheson is vice president, Fraser Companies, Ltd. He has been associated with the Fraser organization since 1933.

Currier Smith

R. F. Gilbert

## Crocker, Burbank Papers Advances Two

Currier Smith has been appointed manager of production planning of Crocker, Burbank Papers, Inc., succeeding Arthur L. Bull, who retired on December 31, 1959. Ronald F. Gilbert succeeds Mr. Smith as assistant manager of production planning.

Born and raised in Maplewood, N. J., Mr. Smith attended Williams College where he was graduated with an A.B. degree, and later attended the Harvard Business School. After serving in World War II, he joined the staff of CB Papers and worked as a salesman of converting paper until 1957 when he was named assistant manager of production planning under Mr. Bull.

Mr. Smith's new duties cover the supervision and direction of all scheduling operations of the book mills.

Mr. Gilbert started with Crocker, Burbank & Co., Ass'cn. manufacturing in 1937 in the supply department. He was later named supervisor of general supplies. In 1950, he transferred to Crocker, Burbank Papers, Inc., sales division, and assumed duties in production scheduling. In 1954 he was appointed schedule manager of both coated and uncoated grades of book paper.

Mr. Gilbert's new duties will involve the supervision of scheduling operation of the CB book mills.

### Scott Paper Shifts Isgro To Winslow Plant

Salvatore F. Isgro has been promoted to the position of finishing superintendent at the Winslow, Me., plant of the Scott Paper Co. Prior to this promotion, Mr. Isgro was finishing maintenance supervisor at the Fort Edward Plant of the Marinette Paper Co., a subsidiary of Scott Paper Co.

John K. Kloss, who has been serving as finishing foreman at the Fort Edward plant, has been promoted to finishing maintenance supervisor replacing Mr. Isgro.

### Consolidated Establishes Market Research Division

The Consolidated Paper Co. has established a Market Research Division under the management of Robert J. Fulop. Mr. Fulop graduated from the University of Toledo in 1959, where he received his Bachelor's degree and Master's degree in business administration.

### Parkinson Goes to New Post At CZ Louisiana Plant

William E. Parkinson, resident manager of the Carthage plant of the Crown Zellerbach Corp. since 1957, will transfer next week to St. Francisville, La., to assume duties as assistant manager of the St. Francisville Paper Co., jointly owned by Crown Zellerbach-Time, Inc.

Thomas I. Meehan, assistant manager of the Carthage mill since 1954, will succeed Mr. Parkinson.

Mr. Parkinson joined Crown Zellerbach in 1940 as a purchasing agent. In January of 1956, he was named superintendent, purchasing storage and shipping, at Camus, Wash., and in July 1956 was appointed general superintendent of woodmill, finishing and services at the Camas plant. He succeeded Edward H. Nunn as resident manager of the Carthage plant in 1957 after Mr. Nunn was transferred to St. Francisville.

Mr. Meehan, who has been with Crown Zellerbach since 1948, is a native of Ogdensburg and an air force veteran. He was graduated from Clarkson College, Potsdam, in 1948, with an engineering degree.

He began his association with the company as a junior engineer, becoming a master mechanic in 1951. In June, 1954, he was transferred to Camas as assistant maintenance supervisor, returning to Carthage later the same year to become assistant manager.

### Consolidated WP&P Announces Appointments

Consolidated Water Power & Paper Co. has appointed Ellis Otto enamel paper tour foreman at Wisconsin Rapids Division. Mr. Otto began his employment with the company in 1925 and has been serving as a machine tender.

Daniel Sachs has joined the Biron Division technical department as a process engineer. Mr. Sachs is a 1959 chemical engineering graduate of the University of Wisconsin.

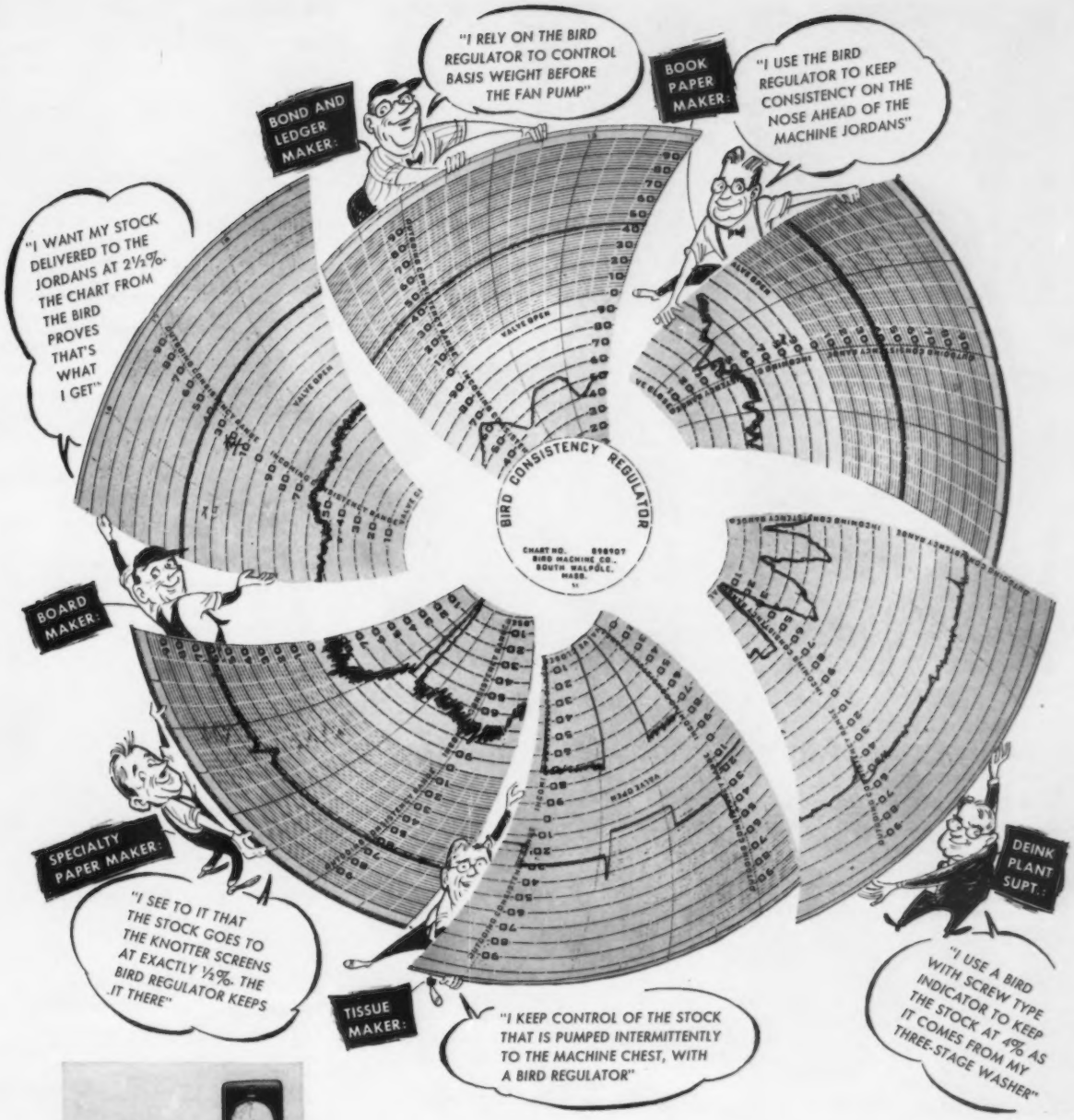
K. M. Guest

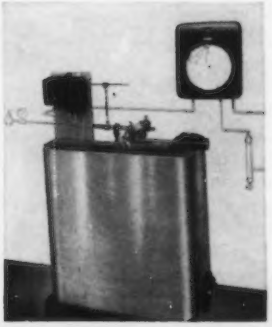
### Brown Names Guest To New Post

Promotion of Karl M. Guest of Gorham, N. H., to the new position of manager, kraft pulp and paper manufacturing at Brown Co. has been announced.

Mr. Guest will be responsible for all operations of Brown Co.'s kraft pulp mill and bleachery and will exercise general supervision over the Cascade paper mill in nearby Gorham and the Riverside paper mill in Berlin, both of which are supplied with pulp from the kraft mill via pipelines. He will report directly to E. H. Petrick, vice president and general manager.

Mr. Guest, who has filled the position of assistant manager of pulp manufacturing since August 1959, was formerly associated with Union Bag, National Container Corp. and Gulf States Paper Corp. in the south. He is a graduate of Clemson College.


"I RELY ON THE BIRD REGULATOR TO CONTROL BASIS WEIGHT BEFORE THE FAN PUMP"
BOND AND LEDGER MAKER:
BOOK PAPER MAKER:
"I USE THE BIRD REGULATOR TO KEEP CONSISTENCY ON THE NOSE AHEAD OF THE MACHINE JORDANS"
"I WANT MY STOCK DELIVERED TO THE JORDANS AT 2½%. THE CHART FROM THE BIRD PROVES THAT'S WHAT I GET"
BIRD CONSISTENCY REGULATOR
BOARD MAKER:
SPECIALTY PAPER MAKER:
"I SEE TO IT THAT THE STOCK GOES TO THE KNOTTER SCREENS AT EXACTLY ½%. THE BIRD REGULATOR KEEPS IT THERE"
TISSUE MAKER:
"I KEEP CONTROL OF THE STOCK THAT IS PUMPED INTERMITTENTLY TO THE MACHINE CHEST, WITH A BIRD REGULATOR"
DEINK PLANT SUPT.:
"I USE A BIRD WITH SCREW TYPE INDICATOR TO KEEP THE STOCK AT 4% AS IT COMES FROM MY THREE-STAGE WASHER"



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S. J. Quattrocchi

H. S. Spencer

D. C. Currie

# Howard Smith Paper Announces Promotions

The following appointments, effective June 1, have been announced by D. S. Abbott, president of Howard Smith Paper Mills, Ltd.

W. P. Nesbitt, formerly manager of the company's Cornwall mill, has been appointed general manager of the Pulp and Paper Division, Howard Smith Paper Mills.

S. J. Quattrocchi, of Alliance Paper Mills, Ltd., a Howard Smith subsidiary, will succeed Mr. Nesbitt as manager of the newly expanded Cornwall mill.

H. S. Spencer, presently manager of the company's Beauharnois mill, will succeed Mr. Quattrocchi as vice president of Alliance Paper Mills. He will make his headquarters in Merritton, Ontario.

D. C. Currie will succeed Mr. Spencer as manager of the Beauharnois mill. Mr. Currie was formerly assistant mill manager.

## Vickery Joins Allied Paper Engineering Staff

Albert Vickery has joined the Allied Paper Corp. as chief electrical maintenance engineer to supervise and coordinate the electrical maintenance functions of the King, Bryant and Monarch Mill Divisions of the company.

Mr. Vickery, who will also act in a staff engineer capacity concerning electrical engineering questions, was formerly electrical maintenance engineer with Southland Paper Mills. He has also held the position of electrical service engineer with the General Electric Corp., and is an electrical engineering graduate of Texas A & M.

## Dron Joins Arizona Firm In Permanent Post

D. W. Dron has been named company engineer for Southwest Forest Industries, Inc. He will work on contemplated plant improvements at the Flagstaff and McNary mills, which will have to do with improved lumber production and the manufacture of wood chips for Southwest's proposed pulp and paper mill at Snowflake.

Mr. Dron has worked for the company on and off in a consulting capacity since 1953. He served as project engineer when a modernization program was in progress at Southwest's mills in Flagstaff and McNary.

## Riegel Paper Opens Indianapolis Sales Office

Riegel Paper Corp. has announced the opening of a new branch sales office in Indianapolis at 150 West Market Street. C. W. Hoffman, Mid-West sales manager, packaging material sales, will be in charge.

The sales personnel formerly located at Riegel's Edinburg (Ind.) plant have been transferred to the new office. These include Mr. Hoffman's sales staff for packaging materials—John T. Ward, John B. Shields, Harold A. Boyle, Charles Powers and Phillip Boyd. In addition, John R. Babeuf, paperboard salesman in Riegel's Carolina Division, will be located in the new office.

## Powell Joins St. Croix Paper

St. Croix Paper Co. announces that Robert R. Powell has joined its sales department. He will work from the company's sales office at 230 Park Ave., New York, N. Y.

Mr. Powell was formerly with Price Brothers Sales Corp. and the Great Lakes Paper Co. He spent a number of years in newsprint sales covering the Mid West and New England areas.

## Scholarship Available

A scholarship in the amount of $750 is offered by PAPER TRADE JOURNAL to a student who wishes to enter the University of Maine to major in pulp and paper technology. This is a continuing grant available in the freshman and sophomore years. The main purpose of the scholarship is to enable a student to major in pulp and paper at the University of Maine who might not otherwise be able to do so. Therefore the financial need of the student will have an important bearing on the choice of the recipient, who will be selected by the Freshman Scholarship Committee of the University of Maine.

Application forms for the PAPER TRADE JOURNAL scholarship should be requested from the Director of Admission, University of Maine, Orono, Me. Early application is advisable.

S. R. CHRISTENSEN

Pneumatic Reel, No. 4 Machine, Union Bag-Camp Paper Corporation, Camp Division, Franklin, Virginia

# Union Bag-Camp Paper Corporation

Production flexibility on bleached and unbleached kraft grades: Union Bag-Camp Paper Corporation's new No. 4 machine at Franklin, Virginia. Successful start-up of this 236" machine marked the culmination of a four-year expansion program at Franklin. For further views and details, please turn the page.

## close-up of 236″ Beloit Kraft Paper Machine at Union Bag-Camp Paper Corporation, Camp Division

Designed to run in the 2000 fpm range, this versatile machine can operate efficiently over a wide range of production grades. The addition of No. 4 machine and the rebuild and modernization of two other machines have resulted in a 50% increase in daily output. **(a)** Oscillating unwind stand, water-cooled brake, and Beloit tru-tension regulator; **(b)** suction pickup arrangement; **(c)** Beloit air-cushioned inlet and shaking Fourdrinier; **(d)** Beloit high-speed suction pickup press section; **(e)** Beloit Model "L," heavy-duty kraft winder; **(f)** Beloit differential drive; **(g)** twin open-sided calender stacks.

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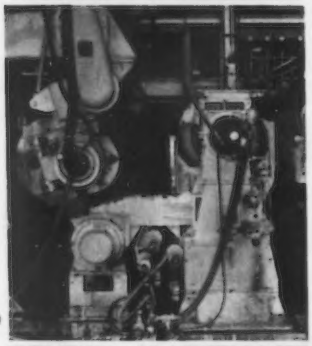

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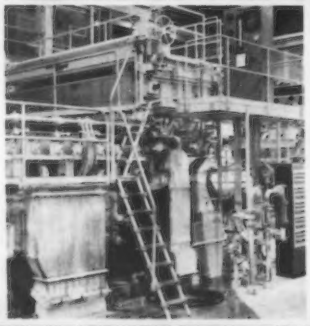

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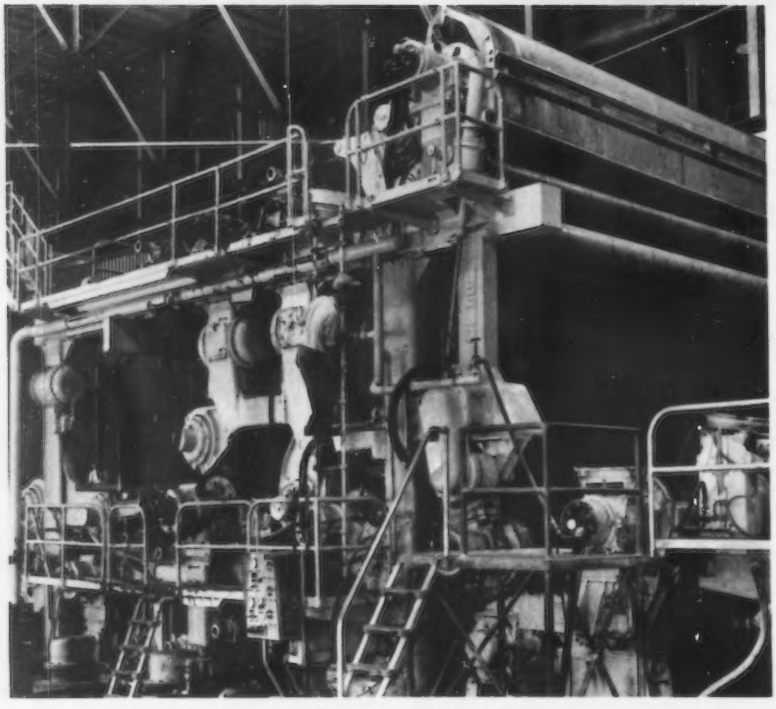

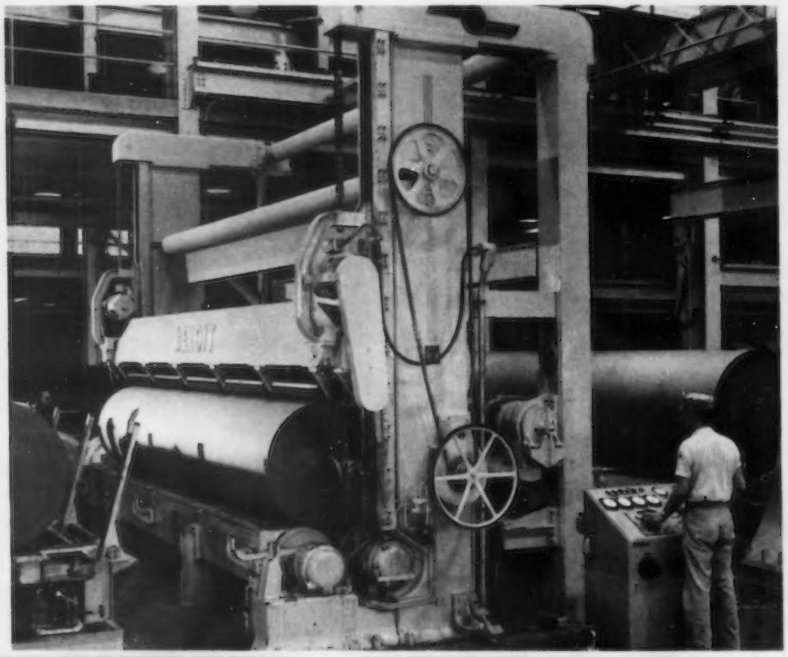

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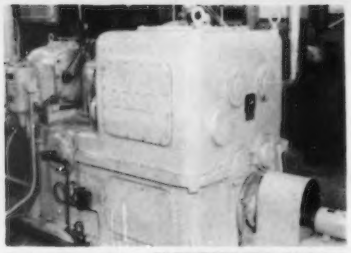

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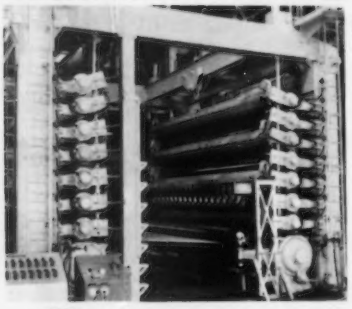

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# NEWS OF CONVERTERS

J. C. Morris

K. R. Mull

## Packaging Corp. Appoints Senior V-P's

A series of top management appointments by Packaging Corp. of America have been announced. Five senior vice presidents have been elected by the company's board of directors. The appointments include:

J. C. Morris, of Wadsworth, Ohio, to senior vice president — board; Robert G. Paramore, of Quincy, Ill., to senior vice president—container operations; Kenneth R. Mull, of Grand Rapids, Mich., to senior vice president — container sales; G. V. Bayly, of Akron, Ohio, to senior vice president—cartons; and W. Harvey Mapes, Jr., of Munster, Ind., to senior vice president—molded products.

All five officers are drawn from the management of the three old line concerns which merged on July 31, 1959, to form Packaging Corp. of America.

W. H. Mapes, Jr.

J. C. Morris, senior vice president —board, was senior vice president and a director of the Ohio Boxboard Co. He joined Ohio Boxboard in 1937, and has held the positions of research director, production manager, and vice president—production.

Robert G. Paramore, elected senior vice president—container operations, was a director and vice president and general manager of the box divisions group of Central Fibre Products Co., with direct responsibility for the operation, sales, and product development of all converting plants. With the company from its inception, he became controller when Central Fibre was formed in 1931 by the consolidation of five packaging organizations.

Kenneth R. Mull, before becoming senior vice president — container sales, was vice president of container operations of the firm's American Box Board Division. A 27-year packaging veteran, he started in 1933 as a bundler in American's Grand Rapids container plant, and rose through the sales and production ranks.

G. V. Bayly, senior vice president —cartons, was vice president in charge of the carton division of the Ohio Boxboard Co. which he joined in 1946 as an industrial engineer.

W. Harvey Mapes, Jr., prior to his election as senior vice president—molded products, was a director, vice president, and member of the executive committee of Central Fibre Products Co. He also is manager of the Mapes Molded Pulp Division of Packaging Corp. A 1937 graduate of Lehigh University, he entered the packaging industry 23 years ago, and was first associated with Mapes Consolidated Manufacturing Co., Griffith, Ind., which was founded by his father, W. H. Mapes, Sr.

R. G. Paramore

G. V. Bayly

### Scott Paper Promotes Graham

Promotion of Ernest N. Graham to the position of assistant production manager at the Cup Division of Scott Paper Co. in Philadelphia, Pa., has been announced by the company. Prior to this promotion, Mr. Graham held the position of facial and napkin foreman at the Fort Edward plant of the Marinette Paper Co., a subsidiary of Scott Paper Co.

### Goodwin Joins American Sisalkraft as Chemist

Robert F. Goodwin has joined the American Sisalkraft Corp., Attleboro, Mass., as a research chemist attached to the development & planning division. Mr. Goodwin is a graduate of the Rhode Island School of Design and was formerly with the Ludlow Manufacturing & Sales Co. in Needham, Mass. He is a member of the American Ass'n. of Textile Chemists and Colorists.

F. H. Meendsen

Robert Neff

Robert Boylan

Gilbert Helmken

## Miller & Miller Chooses President

Fred H. Meendsen has been named president of Miller & Miller, Inc., a subsidiary of Union Bag-Camp Paper Corp. He continues as vice president, marketing, of the parent company.

Miller & Miller, Inc., manufactures folding cartons, printed labels, and related packaging products. Its plant is located on a 39-acre site at Stone Mountain, a suburb of Atlanta.

At the same time the following other appointments were announced:

Robert Neff—executive vice president and general manager;

Robert Boylan—vice president in charge of sales;

Gilbert Helmken — vice president in charge of production.

Mr. Meendsen has a background of 35 years in the paper industry, principally in the area of sales and marketing management. He was elected a vice president of Union-Camp in 1952.

Mr. Neff has had over 15 years experience in sales management and merchandising. Since 1956, he has been Midwestern sales manager for Sutherland Paper Co.

Mr. Boylan has been in the packaging field for 18 years as salesman, national account executive and sales manager.

Mr. Helmken has been trained as an industrial engineer at the parent company's mill in Savannah and, for the past year, has been in charge of production at the M & M plant.

### St. Regis Tacoma Plant Begins Production

St. Regis Paper Co. announces that it has commenced production at its new sheet plant at Tacoma, Wash. The sheet is used in the manufacture of corrugated containers.

Robert C. Hogeboom has been named sales manager for the new plant, Frank Ward is production manager, and Herbert Carlberg is sales service manager.

### Kaplan To Head Envelope Firms

Benjamin B. Kaplan has been elected chairman of the board and general manager of Minnesota Envelope Co. and Kaplan Paper Box Co., St. Paul, and Iowa Envelope Co., Des Moines, Iowa.

Mr. Kaplan, who succeeds his father, the late George Kaplan, founder of the firms, will also continue as executive vice president of the three companies. He is also chairman of the board of Continental Envelope Corp., Chicago.

A. J. Geller, who has been comptroller of the three companies for 33 years, was elected president. He is also president of Continental Envelope Corp. of California in Los Angeles.

Other new officers are Victor Toushin, senior vice president; Solly Robbins, vice president Zelda D. Toushin, secretary; Kenneth Tilsen, assistant secretary, and Mrs. Ida Kaplan, treasurer.

### Flintkote Elects Five Vice Presidents

The Flintkote Co. has elected W. L. Davis, Kennedy Ellsworth, Wm. Wallace Mein, Jr., Noel J. Redmond and H. J. Robertson as vice presidents. All are operating heads of Flintkote divisions.

Mr. Davis, a Flintkote director, is president of Hankins Container Division, acquired by Flintkote in December 1958. Mr. Ellsworth is general manager of U. S. Lime Products Division, acquired in September 1956. Mr. Mein is president of Calaveras Cement Division, acquired in September 1959. Mr. Redmond, a Flintkote director, is president of Blue Diamond Division, a West Coast gypsum producer, acquired in May 1959, and Mr. Robertson, a Flintkote director, is president of Orangeburg Manufacturing Division, acquired in December 1958.

### Barker Greeting Card Sold to Boston Firm

The Barker Greeting Card Co., of Cincinnati, Ohio, has been bought by the United Printers and Publishers of Boston.

William B. Shane, Barker vice president, said his firm will become a wholly owned subsidiary of the Boston firm.

### Western Paper Goods Buys New Plant Site

Western Paper Goods Co., Inc., has purchased the five-acre industrial plant at Spring Grove avenue and Durham street in an expansion move involving more than $1 million.

Charles E. Barold, board chairman of Western Paper, and George C. Biehle, president, said the large facilities will enable their firm to broaden its line of envelope manufacture and improve production engineering.

## J. F. Auer Companies Elect Officers

A.L.A. Industries, an associate company of J. F. Auer, Inc., has elected Joseph S. Cameron vice president. He is already an A.L.A. director.

Merlin L. Jackson, who is president of A.L.A. Industries, and Philip Merlin, who is A.L.A. vice president, were also elected vice presidents of J. F. Auer, Inc., and Camotone, Inc., an associate company. Both Mr. Merlin and Mr. Jackson were also elected to the board of directors.

## Riegel Paper Acquires Bartelt Engineering Co.

Riegel Paper Corp. has acquired the net assets of Bartelt Engineering Co., Rockford, Ill., specialty packaging machinery manufacturer, according to John L. Riegel, chairman of the board of Riegel Paper. Mr. Riegel said the acquisition, which marked Riegel Paper's entry into the packaging equipment field, was important because it would "facilitate the research and development of new and advanced ideas in packaging."

Bartelt Engineering makes custom-engineered automatic machines which form, fill, and seal paper pouches and insert one or more of them into folding cartons. The machines are used for packaging cake mixes, frosting mixes and dehydrated soups, as well as such varied items as candy, tobacco and photographic film. The company also manufactures a variety of other packaging equipment. Bartelt sales are expected to be approximately $3,000,000 for the fiscal year ending July 31, 1960.

Mr. Riegel indicated that Bartelt will be operated under its present name as a wholly owned subsidiary. Harold Bartelt, founder and president of Bartelt Engineering, will become president and a director of the subsidiary.

## National Vulcanized Fibre Elects Engineering V-P

Henry C. Guhl has been elected vice president for engineering by National Vulcanized Fibre Co. The Wilmington, Del., firm is the world's largest manufacturer of vulcanized fibre and is a supplier of laminated plastics and other engineering materials.

Mr. Guhl joined National in 1954 as manager of quality control and process engineering. He was named engineering manager in 1955. Previously, he was associated for 20 years with Westinghouse Electric Corp., where he served as manager of engineering for the Micarta Division.

## Atlantic Gummed Paper Appoints Vice President

Jerome J. Kipnees has been appointed vice president in charge of Package Engineering at Atlantic Gummed Paper Corp., Brooklyn, N. Y. One of the country's leading producers of gummed tapes for industrial and commercial sealing, packaging and shipping; the firm is a pioneer in reinforcing paper with glass fiber.

Formerly with Container Laboratories, Inc., for 17 years, Mr. Kipnees was vice-president and manager of the New York division.

## Bemis Bro. Bag Elects Judson Bemis President

F. G. Bemis of Boston has been elected chairman of the board and Judson Bemis of Minneapolis president and chief executive officer of the Bemis Bro. Bag Co.

The board of directors also announced that C. W. Akin of Minneapolis had been elected executive vice president, R. V. Scott of St. Louis and B. L. Willmore of Boston, vice presidents, and J. T. Braxtan of St. Louis, assistant secretary.

Judson Bemis succeeds his brother, F. G. Bemis, who joined the company in 1926 and just completed his 20th year as its president. F. G. Bemis was elected a director of the company in 1927, assistant treasurer in 1929, vice president in 1937, and president in 1940. As chairman of the board, F. G. Bemis will be in the company's general offices in Boston.

The new president joined the company in 1937, following his graduation from Harvard University. Until 1942, when he became acting manager of the Bemis plant in Minneapolis, he served in various phases of the company's factory, cotton and jute, accounting and auditing, and sales operations.

Judson Bemis became manager of the Minneapolis plant in 1945 and was appointed director of central operations in 1952. He was elected a director of the company in 1939, assistant secretary in 1941, vice president in 1946, and executive vice president in 1956.

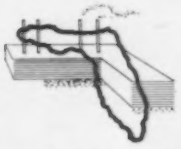
C. W. Akin has been associated with the bag industry since 1932 when he joined the Jaite Co., St. Helens, Ore. This company's St. Helens plant was purchased by Bemis


Felt Facts: PRODUCTION RECORDS BROKEN AGAIN WITH ALBANY FELTS!

KRAFT MILL FELT Runs 80 Days- Trouble-Free Performance!

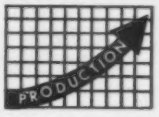
The Actual CASE HISTORY

A large Florida kraft mill installed a special, synthetic content, J-3-treated Albany Felt on the second suction press of one of their machines. The improved drainage and higher speeds from this felt resulted in an all-time high production record. The felt ran a record-breaking 80 days! **Since then each Albany Felt on this position has maintained this high production and life.**



FIRST PRESS FELT BREAKS RECORD, TOO!

J-3 Happy with this profit-making experience on the second press, this company ordered a trial synthetic-content J-3-treated Albany Felt specially designed for its first suction press. The Result: **Another record.** This machine is now producing 250 tons per day compared with a previous average of 234 tons... **16 more tons per day.**



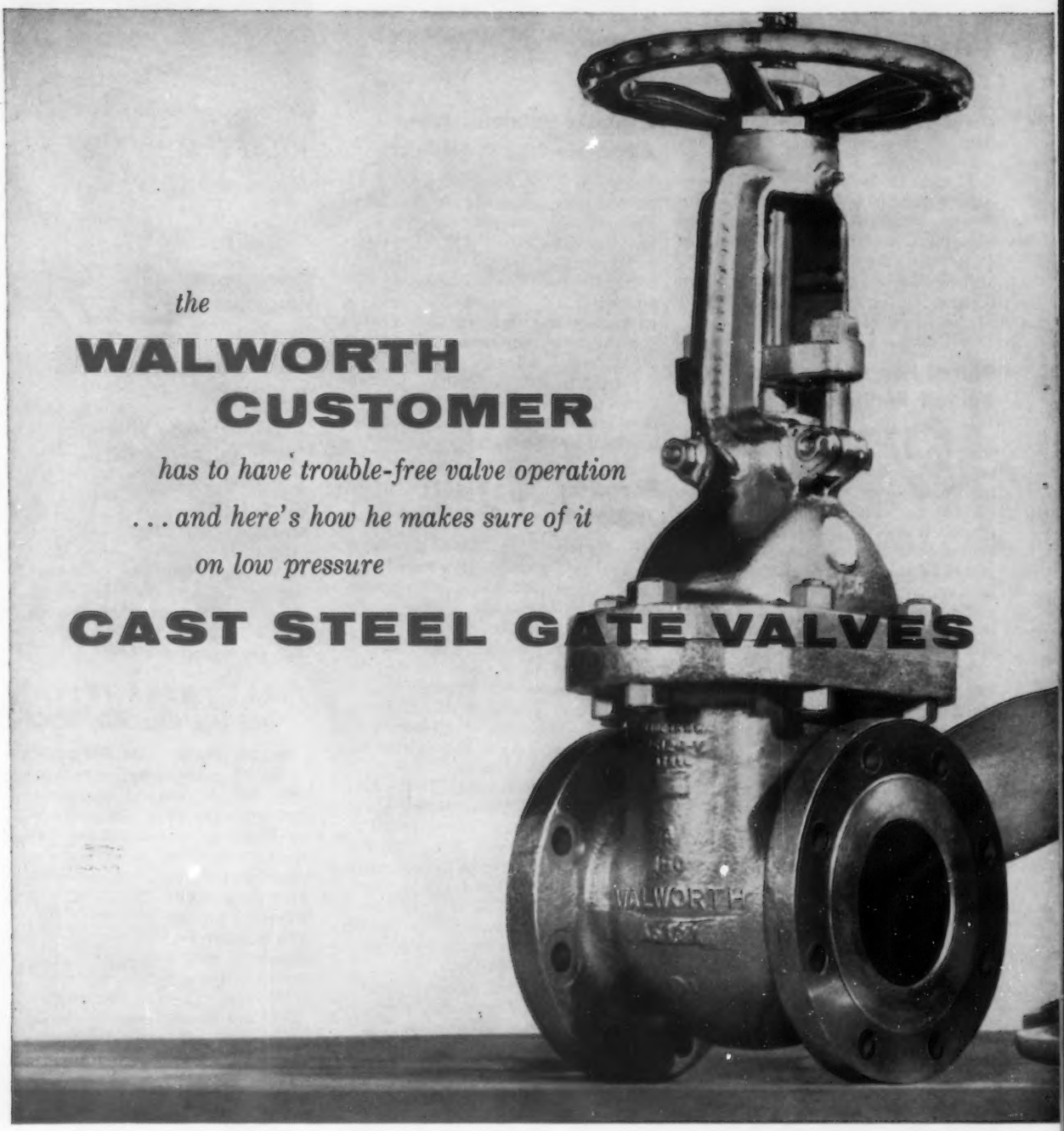

These are two of many case histories which demonstrate Albany's ability to provide papermakers with **better felts that run longer and produce more saleable tons per day.**

AVAILABLE — UPON REQUEST

Ask your Albany Felt Sales Engineer for your handy **Paper Machine Production Calculator.** An invaluable aid to papermakers for determining production per hour or per day. It's yours—free.

Talk it over with your Albany Felt Sales Engineer

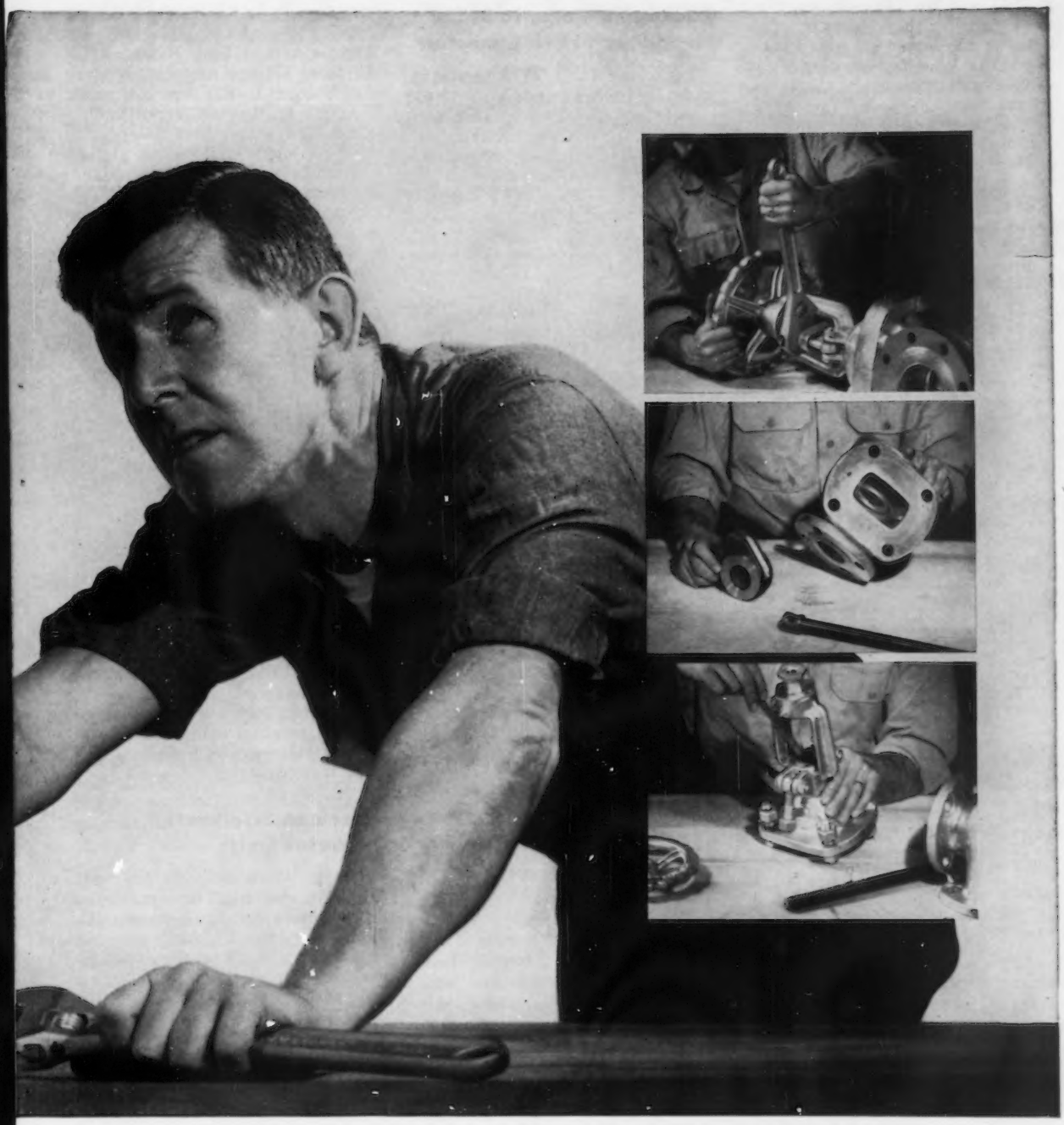
AF ALBANY FELT COMPANY ALBANY, N.Y. The World's Largest Manufacturer of Paper Machine Felts




Before the Walworth Customer makes his decision on cast steel valves he gets persistently curious about things like these: What features reduce turbulence and pressure drop? Can body-to-bonnet joint be reassembled in the field without danger of misalignment? Is stuffing box deep enough to assure tightness and maximum life of packing?

In the Walworth Cast Steel Gate Valves he finds streamlined ports to fight turbulence and pressure drop. He finds flat gasket and male-and-female joint closures that assure correct realignment in field or shop reassemblies. He finds stuffing box depth adequate-plus for tightness and packing durability.

It's for customers like this man that



Walworth exists. We know he's hard to please, and we're proud to please him. If his exacting buying standards in valves are yours, too, we'd like you for a Walworth Customer. For details on all types and ratings of Walworth Cast Steel Gate Valves, or any of the complete line of Walworth Valves, contact your Walworth Distributor.

*Or write* **WALWORTH** *750 Third Avenue, New York 17, N. Y.*

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in 1941, and Mr. Akin was appointed sales manager there in 1946. Since then, he has served as supervisor of paper bag sales for the entire company, assistant director of sales, and Omaha plant manager. In 1958, he was appointed director of allied operations, with offices in Minneapolis, and was elected a director of the company in 1959.

R. V. Scott joined the company in 1931. During 1959, he was made assistant director of sales and elected a director of the company, following posts as manager of the company's Chicago general sales division and as director of eastern operations.

## Packaging Corp. to Move Headquarters to Evanston

Packaging Corp. of America has announced plans to establish its corporate headquarters in Evanston, Ill.

In a gradual move, the company's present administrative offices, now located in Quincy, Ill., Grand Rapids, Mich., and Rittman, Ohio, will be consolidated in new quarters at 1632 Chicago Ave., in the Chicago suburb. The new corporate headquarters will be in operation on February 15, 1960.

Packaging Corp. of America was formed July 31, 1959, by the three-way merger of the former Central Fibre Products Co., American Box Board Co., and Ohio Boxboard Co. All three old line concerns, approximately equal in size, are now major divisions of the new organization.

The new concern operates a network of eight major mills and 41 converting plants in an area extending from New York to Utah. It produces jute and kraft linerboard, boxboard, bleached kraft, corrugated shipping containers, molded pulp products, egg packaging products, folding cartons, and many other paperboard products. Extensive timberlands and tree farms are maintained by the firm as sources of raw materials.

## Carter, Rice & Carpenter Paper to Merge

Merger of Carter, Rice & Co. of Oregon with Carpenter Paper Co. of Omaha, Nebr., has been announced in a joint statement by executives of the two firms.

Effective February 26, the Oregon firm will operate as the Carter, Rice division of Carpenter Paper from its present location at 735 NW 16th Ave., Portland. James W. Murphy president of Carter, Rice, will be division manager.

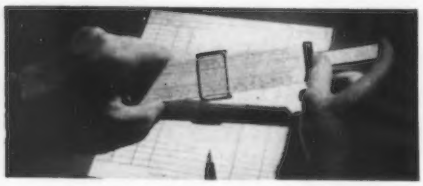
Carpenter Paper operates seven envelope manufacturing plants and distributes paper from 35 locations in 22 Western states.

## American Sisalkraft Promotes Smith

Joseph W. Smith has been appointed manager of converter sales by American Sisalkraft Corp. Mr. Smith has been assistant manager of the firm's San Francisco sales office for the past three years. In his new position at Sisalkraft's Attleboro, Mass., plant, he will handle the firm's new lines of flame resistant vapor barriers.

Mr. Smith has been with the Sisalkraft sales organization for 20 years and, prior to his San Francisco post, he was a sales representative in several midwest and southern territories.

your program
for continued
business growth
and profits deserves the
services of experienced specialists



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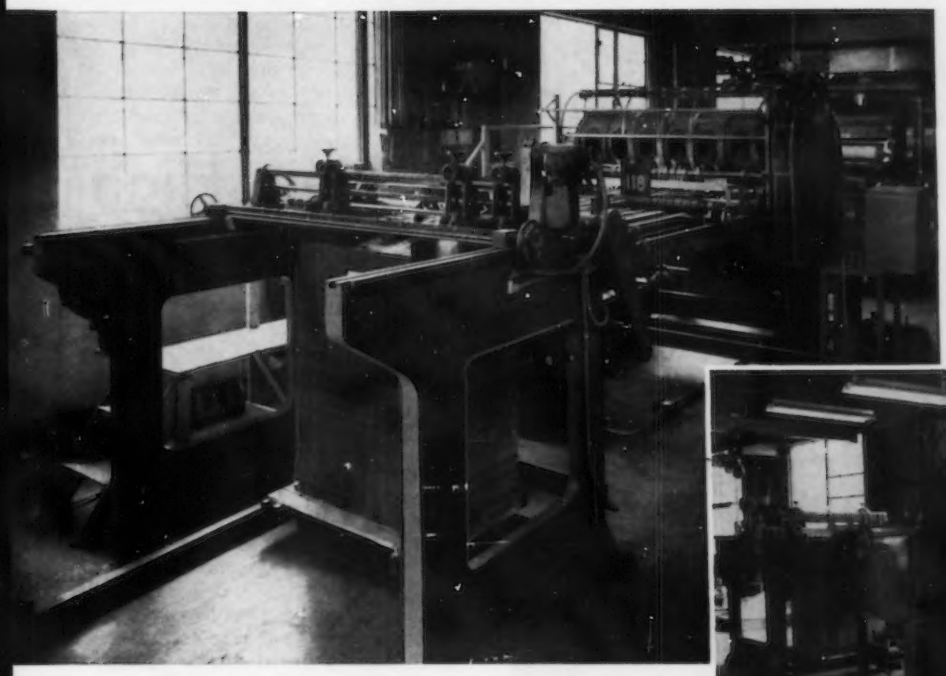
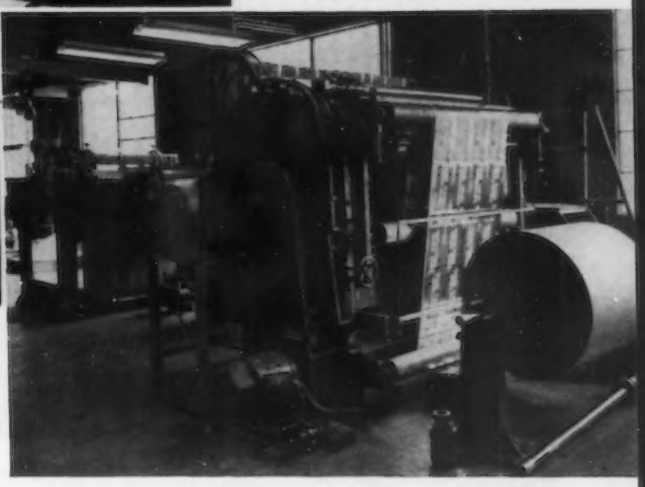
# Clark-Aiken SHEETER VERSATILITY



# BOOSTS FINISHING ROOM PROFITS



## at Pacific Coast Foil Company's San Francisco Plant . . .

Summarizing Pacific Coast Foil Company's experience in sheeting foil on Clark-Aiken equipment, Mr. R. Shelley Wood, Jr., assistant to the president, writes:

"Our Clark-Aiken sheeter displays the versatility necessary to make it a profitable adjunct to our aluminum foil converting operation. We sheet laminated materials of a wide weight range with equal facility. Even single roll feeding of the lightest weight materials presents no problem. In addition, the sheeter handles with equal ease, any sheet size normally needed in a converting operation. It adjusts to rapid short run changeovers to different sheet sizes with a minimum of set-up time. One of its most valuable features, in our operation, is the overlapping delivery and jogging which almost eliminates hand work in succeeding operations. This, of course, leads to great savings in production time and shortens our delivery schedules. Other salient points are the ease with which it adapts to electric eye control and the absence of all but the most nominal maintenance costs."

### Clark-Aiken Equipment is custom tailored to your finishing room requirements . . .

Pacific Coast Foil Company's experience is typical of the results achieved through practical finishing room automation engineered by Clark-Aiken to fit specific requirements.

If your converting operation is bogged down because of slow or inefficient foil sheeting place your problem in the hands of Clark-Aiken engineers with complete confidence. Let them analyze your needs and make recommendations based on their findings. You will realize the benefits that only modern production techniques and up-to-date machinery can assure you.

You profit three ways—increased production, lower operating costs and minimum maintenance costs. Consult Clark-Aiken for prompt and qualified consideration of your finishing room production problems.

THE Clark-Aiken COMPANY

957 SPRINGFIELD ROAD

LEE, MASSACHUSETTS

# Paper Industry Is Moving Into a New High

**Morris C. Dobrow,**
Executive Secretary,
Writing Paper Manufacturers Ass'n.

The overall paper industry rung up a fine record in 1959, with a total production of 34 million tons. The output in 1959 was eleven per cent higher than in 1958; eight per cent higher than in 1956, the previous record year.

The outlook now for 1960 is for a further increase in production to something like 36 million tons. The industry again is demonstrating that it is a real "growth" industry. The output in the first quarter of 1960 is almost sure to approximate nine million tons. This was the total production of the industry for the entire year of 1925. The industry's output is now four times what it was 35 years ago.

## Outlook for 1960

On January 1st the "Golden 60's" arrived in America and Western Europe on a wave of booming optimism—the like of which hasn't been seen in many years. In the United States the optimism regarding 1960 is greater than that which prevailed at the beginning of 1959.

The big news is the settlement of the steel strike. It was not a very happy settlement because a 40 cent package increase, even over a 30-month period, looks inflationary. Collective bargaining failed and political pressure influenced the settlement. However, no important increases go into effect until next December. The steel settlement opened the way for the country's most prosperous year.

With the biggest cloud removed from the labor-management outlook, production and employment are expected to hit highs in most branches of the economy in this presidential

Morris C. Dobrow

election year. All major industries are headed for record production for the first half of the year to fill consumer orders and rebuild inventories. Economic expansion is expected to continue throughout 1960, but more rapidly in the first six months than in the latter half of the year.

Tight money and higher interest rates are necessary to avoid serious inflation and to maintain the integrity of the dollar in international markets. Nevertheless, restricted credit and further increases in interest rates will ultimately bring the boom to an end.

The only big threat left on the bargaining front is the possibility of a railroad strike in April or May. In that industry, the featherbedding practices are much more serious and more deeply rooted than in the steel industry. However, the procedures of the Railway Labor Act make a strike in that industry much less likely—especially since the engineers have agreed to binding arbitration of any dispute with the railroads. The threat of a railroad strike could cause quite a scramble for inventories.

As we complete the first two months of 1960, it is evident that nearly all leading segments of the U. S. economy will be moving upward to new highs. The major areas of national output will rise from 1959 to 1960 by approximately the following amounts.

## Gross National Product (GNP)

Despite the interruption of steel production by the strike, the Gross National Product made a new high in 1959. The upward spurt was temporarily halted by the strike, but this was resumed as soon as the mills were back in operation.

The GNP, which measures all expenditures, both governmental and private, for the entire economy, in 1959, was eight per cent higher than the year before. It promises to advance another five per cent in terms of constant dollars this year and, perhaps, six to seven per cent because of price rises.

## Personal Incomes

In 1959, personal and disposable incomes were up 5.6 per cent. Personal consumption expenditures increased 6.1 per cent, reflecting the increased borrowing by consumers for increased purchases. Forecasts are for another five to six per cent rise in 1960. The consumer remains optimistic about the future and is still willing to spend his money freely.

## Expenditures for New Plant and Equipment

The key element to the present recovery in the U. S. that will make

for a new boom and prosperity in 1960 is a renewal of expenditures for plant and equipment. Such expenditures began to rise in the second half of 1959. For all of 1959, they were $32.6 billion, as against $30.5 billion in 1958, a gain of seven per cent.

In the first quarter of 1960, such expenditures are at the annual rate of $34.4 billion, a gain of twelve per cent over the first quarter of 1959. It is expected that something like this rate will continue throughout the year. However, rising interest rates may interfere with some projects. But it should be remembered that most of the projects are being financed from a cash flow within the companies making the expenditures.

Dr. Keezer of McGraw-Hill Publishing Co. estimates that 80 per cent of the capital expenditures for 1960 will be financed out of retained earnings and depreciation.

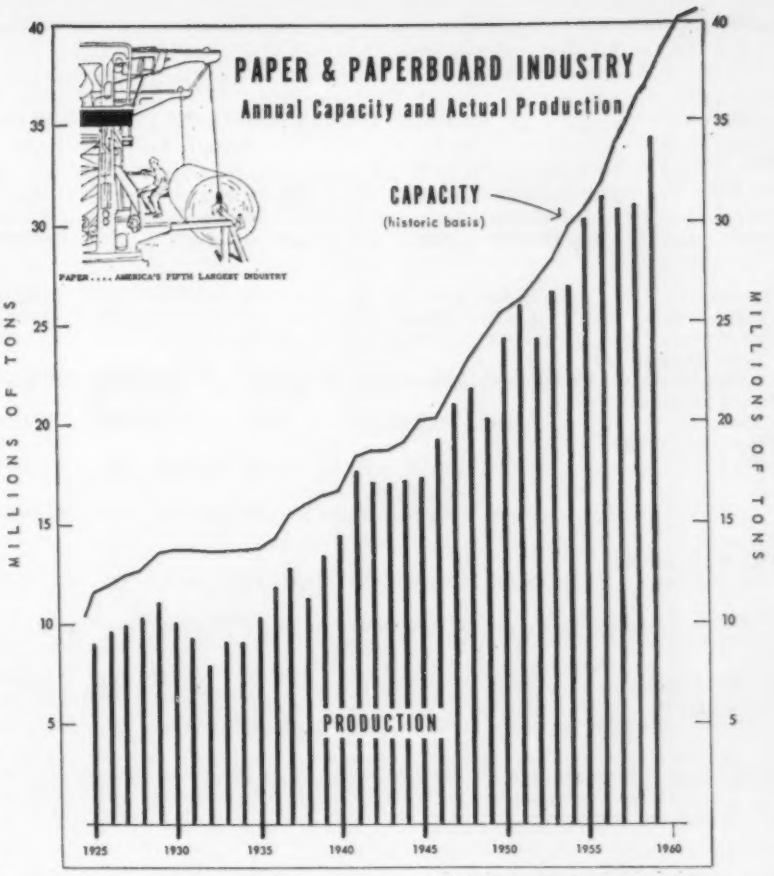
## Federal Reserve Board Index of Industrial Production

This index which measures in physical quantities, not dollars, the output of factories and mines, rose 13 per cent in 1959 over 1958. With the termination of the steel strike, there is every indication for record production figures—certainly in the first six months of this year. It may continue at this high level well into the second half of the year. It is now expected that the output for the year as a whole will establish a new high record of five to seven per cent above the 1959 record.

## Commodity Prices

Commodity prices continued relatively stable during 1959. The prices for industrial or finished products tended somewhat upward. The prices of farm products continued to decline sharply. At the end of the year, total commodity prices were only 0.3 per cent lower than at the end of 1958. However, farm prices were down six per cent and prices of industrial commodities were up one per cent.

At the beginning of 1960 the "cost of living" index was 1.7 per cent higher than a year ago. Although the wage-cost-price spiral continues its inflationary pressure on the price level, inflation is not considered a serious threat in 1960. Elimination of the deficits in the government's fiscal program, the limitation of credit by the Federal Reserve Board and the keener competition brought about by excess capacity in many industries, are all powerful counteracting forces against the inflationary pressures.



Writing Paper Manufacturers Association

## Capacity Survey

Table I shows a summary of completed and projected increases in industry capacity. In captioning these capacity figures as the "historic basis," reference is made to the basis defined in the 1957 release by the Department of Commerce on the paper industry's capacity. This measured capacity in the paper industry on the basis of 310 days' (six days per week) operation for all mills, except newsprint which used an average of 348 operating days and paperboard which used an average of 313 operating days.

However, it is well known that in some areas where custom, demand and adequate supplies of raw material and labor permit, actual production is on a *six to seven*-day basis and capacity is accordingly higher for such machines. It probably would be more accurate to say that 108 per cent (of 6-day capacity), rather than

**TABLE I**

**CAPACITY SURVEY**

***Historic Basis***

| End of Year | Total Paper Capacity (Tons) | Total Board Capacity (Tons) | Total—Paper and Board Capacity (Tons) |
|---|---|---|---|
| 1958 | 16,600,000 | 19,500,000 | 36,100,000 |
| 1959 | 17,300,000 | 20,000,000 | 37,300,000 |
| 1960 | 17,900,000 | 20,800,000 | 38,700,000 |
| 1961 | 18,400,000 | 21,800,000 | 40,200,000 |
| 1962 | 18,500,000 | 22,100,000 | 40,600,000 |

**TABLE II**

**UNITED STATES CAPACITY AND PRODUCTION BY GRADES**

***Historic Basis***

| Grade | 1956 End of Year Capacity | 1956 Actual Production | % | 1957 End of Year Capacity | 1957 Actual Production | % | 1958 End of Year Capacity | 1958 Actual Production | % | 1959 Preliminary End of Year Capacity | 1959 Preliminary Actual Production | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Newsprint | 1,721,000 | 1,620,146 | 94 | 2,010,000 | 1,806,576 | 90 | 2,202,000 | 1,726,000 | 78 | 2,446,000 | 1,920,000 | 78 |
| Printing Papers | 4,059,000 | 4,304,013 | 106 | 4,322,000 | 4,032,679 | 93 | 4,368,000 | 4,052,000 | 93 | 4,623,000 | 4,525,000 | 98 |
| Fine Papers | 1,515,000 | 1,575,468 | 104 | 1,605,000 | 1,515,605 | 94 | 1,675,000 | 1,546,000 | 92 | 1,796,000 | 1,706,000 | 95 |
| Coarse Wrapping and Packaging Papers | 3,567,000 | 3,947,898 | 111 | 3,575,000 | 3,654,576 | 102 | 3,773,000 | 3,612,000 | 96 | 3,907,000 | 3,943,000 | 101 |
| Special Industrial Papers | 662,000 | 682,736 | 103 | 717,000 | 659,081 | 92 | 745,000 | 642,000 | 86 | 762,000 | 746,000 | 98 |
| Tissue and Sanitary Papers | 1,844,000 | 1,859,861 | 101 | 2,004,000 | 1,912,000 | 95 | 2,153,000 | 1,936,000 | 90 | 2,180,000 | 2,083,000 | 96 |
| TOTAL | 13,368,000 | 13,990,122 | 105 | 14,233,000 | 13,580,517 | 95 | 14,916,000 | 13,514,000 | 91 | 15,714,000 | 14,923,000 | 95 |
| Paperboard and Wet Machine Board | 15,534,000 | 14,380,662 | 93 | 16,323,000 | 14,199,729 | 87 | 17,058,000 | 14,261,000 | 84 | 17,480,000 | 15,847,000 | 91 |
| TOTAL | 28,902,000 | 28,370,784 | 98 | 30,556,000 | 27,780,246 | 91 | 31,974,000 | 27,775,000 | 87 | 33,194,000 | 30,770,000 | 93 |
| Building Paper | 1,640,000 | 1,428,395 | 87 | 1,640,000 | 1,328,642 | 81 | 1,640,000 | 1,390,000 | 85 | 1,655,000 | 1,382,000 | 84 |
| Building Board | 2,004,000 | 1,642,013 | 82 | 2,150,000 | 1,557,581 | 72 | 2,449,000 | 1,646,000 | 67 | 2,496,000 | 1,899,000 | 76 |
| TOTAL INDUSTRY | 32,546,000 | 31,441,192 | 97 | 34,346,000 | 30,666,469 | 89 | 36,063,000 | 30,811,000 | 85 | 37,345,000 | 34,051,000 | 91 |

NOTE: Historic Basis was defined in the 1957 release by the Department of Commerce on the paper industry's capacity. This measured capacity on the basis of a 6-day operation for all mills, except newsprint which was based on its operating schedule (348 days—industry average) and paperboard which used an average of 313 operating days.

100 per cent represents the potential production.

The new capacity to come on stream in 1960 and 1961 is substantial. The figure for 1961-62 may be considered incomplete because some of the plans under way have not yet materialized into actual construction contracts.

## Paper and Board Production

The preliminary figure for the producton of paper and paperboard in U. S. in 1959 is 34,051,000 tons. Paper production was nine per cent higher than in 1958; board production was up 12 per cent. In 1960 production should be in the neighborhood of 36,000,000 tons. Thus, the production figures, translated into operating ratios, are as follows:

| | 6-day basis | 6½ days' basis |
|---|---|---|
| 1955 | 98% | 90% |
| 1956 | 97% | 89% |
| 1957 | 89% | 83% |
| 1958 | 85% | 79% |
| 1959 | 91% | 84% |
| 1960 (est.) | 93% | 86% |

## Fine Papers

Fine paper production in 1959 was ten per cent higher than in 1958. Production in 1959 also exceeded the 1956 peak by eight per cent.

With the capacity of the fine paper industry at the end of 1959 at 1,796,000 tons and actual production at 1,706,000 tons, this segment of the industry had an average operating ratio of 95 per cent, on a six-day basis. The projected capacity for the end of 1960 is 1,940,000 tons. If demand and production should rise by six per cent, as now is estimated, the operating ratio for 1960 will be about 93 per cent.

## Printing Papers

Printing paper production in 1959 was 4,525,000 tons, twelve per cent higher than in 1958. Production in 1959 was five per cent higher than in 1956, the previous peak year. In 1959 the printing paper industry operated at 98 per cent of capacity, on a six-day basis. At the beginning of 1959, printing paper capacity was 4,368,000 tons. Additions during 1959 amounted to 255,000 tons. An additional 170,000 tons are expected to come on stream during 1960.

Magazines, as well as newspapers had substantial declines in advertising lineage during 1958. Despite the rapid recovery of general business early in 1959, recovery in advertising was somewhat delayed. But improvement in the latter half of the year resulted in a 1959 over 1958 increase of seven per cent in newspaper lineage and eight per cent increases in magazine lineage.

## Wood Pulp

The domestic pulp industry did very much better in 1959 than it did the year before. Overall, the domestic pulp industry produced eleven per cent more pulp in 1959 than it did in 1958. Total consumption of wood pulp also increased by eleven per cent. However, market pulp mills still continue to suffer from considerable overcapacity. The industry raised its operating ratio to about 75 per cent by the end of the year, largely influenced by the improvement in dissolving pulp. The average operating rate during 1959 was 73

per cent against 67 per cent in 1958.

Shipments of dissolving pulp to domestic customers increased by 14 per cent, while exports increased 24 per cent, making a total increase of 16 per cent.

Shipments of paper grade market chemical wood pulp to the U. S. market, from North American and Scandinavian supply sources, increased by 12 per cent but the increases were not even. They were as follows

| | |
|---|---|
| From U. S. Mills ..... | + 5% |
| " Canadian Mills ..... | + 8% |
| " Scandinavian Mills ... | +52% |

Inventories of purchased bleached pulp at consuming mills were at about six weeks' current consumption.

### Looking Ahead

As we go from the decade of the "Frightening 50's" to the "Soaring 60's," it is a good time to look in the crystal ball to see what we may expect.

The total value of goods and services produced in the U.S. in 1959 (estimated at $480 billion) will rise to about $750 billion by 1970. This is based on constant dollars. If we have more inflation, the increase will be proportionately greater. This forecast is in line with past trends. Between 1949 and 1959, the GNP, on the basis of constant dollars, rose by 50 per cent. From the end of 1949 to the end of 1959, the price level rose by 25 per cent.

Recently, there has been a lot of political and economic argument about the industrial growth of this country. It will take a long time to resolve these arguments and they may never be resolved until we have lived through the period. However, I believe we can take as a benchmark for the years ahead an averaage growth of the American economy of about four per cent per annum, compounded. This would mean a gain of 50 per cent in the 10-year period ahead.

We cannot assume the absence of recessions. If the cyclical pattern, such as we have had since the end of the war, is repeated, there will be two or three minor setbacks. These are not inevitable, of course, but they have a way of occurring in a free economy. Extra-rapid growth, such as we had in 1956 and 1959, will more than offset the growth lost in the poor years. As the GNP rises, there will be increased incomes for those engaged in producing the additional goods and services. Production, consumption and employment will go up together. The higher output will require new plant and equipment, after the present excess equipment has been digested in the next few years.

The population of the U.S.—now 180 million—will rise to about 210 million in the next ten years. To take care of all these new people and the increased production of goods and services will require the use of more paper. We hope that research and promotion will, at the same time, increase the per capita consumption.

I believe it is reasonable to expect that the paper industry, too, will have an average increase of four per cent, compounded, or about 50 per cent in the next 10 years.

# Weighing Chipper Sawdust Saves Knives

**Lawrence M. Gibson,**
Sulphite Superintendent,
Kansas City Star Co.,
Park Falls, Wis.

It has always been known that there is a direct relationship between chipper efficiency, chip quality and the amount of sawdust produced by a chipper. However, no accurate estimate of this relationship has ever been obtained. To provide a perpetual check on the amount of sawdust being produced, the Flambeau Paper Division of the Kansas City Star Paper Co., in Park Falls, Wis., has installed a simple continuous scale and recorder.

With this unit, the amount of chipper sawdust is read and recorded once per hour during woodroom operation. The amount of downtime is also noted. Each set of chipper knives is numbered and a record made of each knife change, of the number of cords of wood the knives cut, and the amount of sawdust produced per cord. The only other thing done was to give the knife grinder operator the sawdust report.

From the results, it was quickly determined that knife grinding was the secret. By the end of the first five weeks of operation, the sawdust produced had dropped one per cent, or a savings of 2½ cords on a 250 cords per day basis. Coupled with this, the cords of wood chipped by one set of knives had increased from 71.5 cords to 125 cords. This represents a 75 per cent increase in knife life. Of course, when knives come off the chipper in better condition, less material is ground away when sharpening them, which is an additional saving. Since a set of knives now runs a full shift there is no lost time for the crew due to knife changes.

The chips produced are much more sharply cut. This means better acid penetration into the chips in the digester. The amount of oversized chips going to the rechipper has been materially reduced.

The scale and recorder unit was purchased from Northern Lakes Forest Products of Park Falls, Wis., at a cost, including installation, of $300. It is powered by a one-quarter h.p. motor and can be installed in a three foot by three foot space as part of a sawdust chute. From indications, its life expectancy will be many years. Results to date show that wood savings, knife savings, and time savings are more than returning the cost of the equipment once each week on a 250 cords per day operation.

It is possible that many mills were doing a better job of grinding knives than Flambeau was, although Flambeau has a new knife grinder and thought their grinding was up to standard. It was found that the eye cannot see whether the cutting edge of a knife has been burned and will microscopically chip or crumble away. However, the sawdust weigher indicates the condition of knives continuously. A set of knives that have brushed a grinding stone too hard are pin pointed in two or three hours of operation. Properly ground knives hold a constant rate of sawdust during an 8-hour, 125-cord operation. Should the knives cut into tramp iron, wire, etc., the sawdust recorder shows that there is trouble.

It has been found that each species of wood has a sawdust rate. Also it has been found that when the temperature of the wood drops to 0°F. and below the sawdust rate goes up from 5 to 15 pounds per cord of wood. Undoubtably there is a sawdust rate for various chip lengths but this relationship has not been studied.

MAINTENANCE SERIES
NUMBER 9

# Care in Operation Key to Maintenance of Modern Pulpstones

**To insure long service from a grinder's pulpstone, the critical factors of hanging, dressing, and starting up of a new stone, and its judicious use must be considered. A previous article in this series discussed the grinder.**

**James H. Perry,**
Supv., Pulp and Paper Section,
Norton Co.

**William H. Copeland,**
Pulpstone Technician,
Norton Co. of Canada, Ltd.

Today's mechanical pulp is no longer simply ground wood. It is a carefully tailored product produced to meet each specific paper requirement. It is the most economical pulp and yields the greatest return from our forests. Not all of this would have been possible without continued progress in pulptone design and composition. This has come about as a result of the close teamwork between the operator and the manufacturer. Pulpstone design, therefore, is continually changing to anticipate the increasing demands of the paper industry.

The modern manufactured pulpstone consists of an assembly of abrasive segments anchored securely to a reinforced concrete center and so staggered that they form a continuous grinding surface. The spaces or gaps between these segments are filled with a jointing material which is not affected by constant exposure to hot pulp and which has a resistance to wear closely approximating that of the abrasive segment. The concrete centers or cores are composed of the strongest cement mix obtainable and they are reinforced with steel rings designed and positioned to produce an assembly strong enough to insure an adequate safety factor for modern high power, high speed grinding.

### Care of the New Pulpstone

The pulpstone is shipped to the mills on skids and packaged scientifically to protect it and to facilitate its handling. The pulpstone should remain in that package and on the skids to protect it until it is installed. It should be stored in a dry place. Atmospheric temperature has no effect on the stone provided it is kept dry. If it is necessary to move the pulpstone at any time, every care should be exercised to prevent damage. Either use rollers under skids or lift with a crane, placing the slings at the position indicated on the skids.

### Centering the Shaft

The pulpstone is accurately trued and balanced at the factory. Several methods of accurately centering the shaft are provided by the manufacturers. In one case, adjustable centering screws are located in the hole of the stone at each end (see Figure 1).

The following is a suggested technique for centering pulpstones, uti-

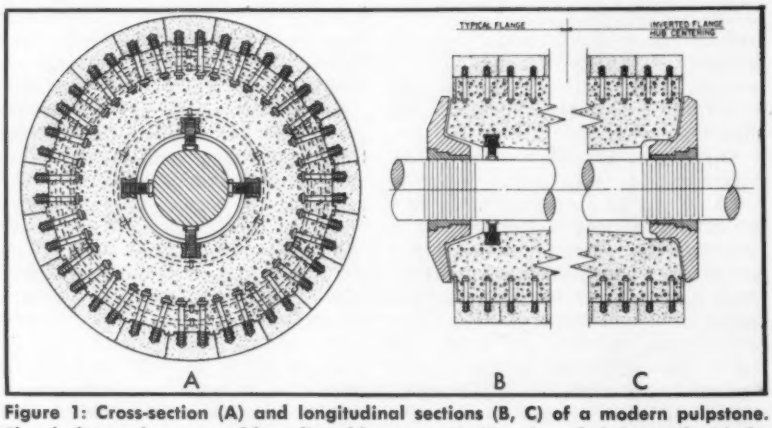



**Figure 1: Cross-section (A) and longitudinal sections (B, C) of a modern pulpstone. The shaft may be centered by adjustable screws (A, B) or by a hub intregal with the flange accommodated by a recess in the stone (C).**

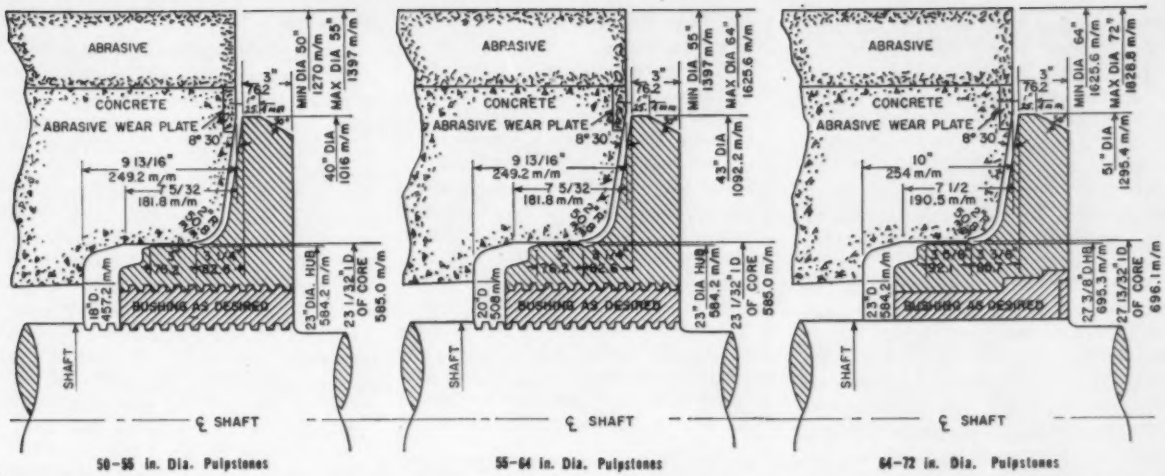



**Figure 2 indicates dimensions of standard self-centering flanges with inverted bevels for three diameter classes of pulpstones. The integral hub provides accurate centering of the shaft as it is fitted into the recessed stone.**

lizing centering screws:

Set the stone so that the centering screws may be placed at 45° to the floor so that the shaft may be supported by two studs. Next, install the screws after coating well with heavy high-temperature grease, leaving clearance for the shaft. Then install the shaft, locating it laterally in the correct position so that it will fit into the grinder. Suspend the shaft by crane or jack, adjust the screws at each end to bring the shaft to approximate center. Lay a straight edge on the face of the stone parallel to the shaft and in line with the screws on the 45° lines, then measure from straight edge to shaft at each end of the stone. Repeat the measurement in line with the screws directly opposite. Adjust the screws to halve the difference between the first set of measurements and the second. Repeat the procedure at the sets of centering screws 90° away, adjusting the screws to halve the difference in measurement. Now recheck the measurements at all four screws at each end, taking successive measurements diametrically opposite, adjust screws to the same measurement, straight edge to shaft, all around. The lateral position of the shaft in the stone should be checked again at this point. Measuring may be done with an ordinary steel scale, but the most accurate results will be obtained by use of a long-travel dial indicator attached to a suitable rod which has a 90° vee at the end to ride on the shaft. It is possible with this method to position the shaft absolutely concentric with the grinding surface of the stone.

Another method of accurate stone centering is provided by the manufacturer in the inverted bevel self-centering type, in which a recess is molded into the sides of the stone to accommodate a hub which is integral with the flange (see Figure 2). The pulpstone manufacturer in another case provides rings which are bored to accommodate the grinder shaft and which fit into a tapered area in the hole of the stone at each end to provide concentricity.

## Mounting

In hanging the pulpstone, it is recommended that gaskets ⅜-inch to ½-inch thick of the same diameter as the flanges be used. These may be made up of either fiberboard or double thicknesses of dryer canvas. The flanges may also be grouted in with either cement or sulphur (see Figure 3). When the stones are mounted with either cement or sulphur grouting, the flange-bearing areas on the sides of the stone should be roughened with a small air hammer and a star drill, or by hand, to insure that the grouting mix adheres to the stone. It is essential when tightening flanges that the shaft turn freely in the flange bushings, and that both shaft, flanges and bushings be in top condition. This is most important because generally the stone is not removed until it is worn out and, therefore, may be in service for a number of years. The flanges must be heavy enough to withstand the sustained load used on the grinder and the threads on both the shaft and flanges must be lubricated with a material which will prevent the threads from binding or freezing. There are a number of these lubricants on the market and it is advisable to check with either your pulpstone engineer or a lubricating engineer to obtain the proper one.

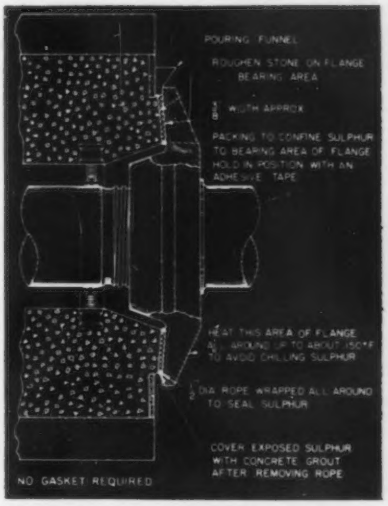

POURING FUNNEL
ROUGHEN STONE ON FLANGE BEARING AREA
WIDTH APPROX
PACKING TO CONFINE SULPHUR TO BEARING AREA OF FLANGE HOLD IN POSITION WITH AN ADHESIVE TAPE
HEAT THIS AREA OF FLANGE AND AROUND UP TO ABOUT 150°F TO AVOID CHILLING SULPHUR
DIA ROPE WRAPPED ALL AROUND TO SEAL SULPHUR
COVER EXPOSED SULPHUR WITH CONCRETE GROUT AFTER REMOVING ROPE
NO GASKET REQUIRED

**Figure 3: In hanging a stone, the flanges may be grouted in with sulphur, as shown. No gasket is required.**

## Dressing and Starting

Before applying wood to the new pulpstone surface, a 14- or 16-cut diamond point burr should be used to put the stone in perfect concentricity, that is, trued. In some mills the diamond burr is traversed until it is worn out, even after the stone is running in truth. This serves to place the surface of the stone in good condition without the usual sharpness which normally is the result of a fresh diamond mark. After the new

pulpstone has been conditioned with the diamond burr, then apply the normal pulp-making burr lightly. When the grinder is equipped with a micrometer lathe, which is maintained in as near perfect condition as possible, the operator has the opportunity to measure the degree of penetration. By gradually increasing the readings, the desired pattern may be obtained.

When the stone is installed in the grinder it is a relatively simple matter to apply the final tightening of the flanges to the stone. In many mills the stone is started up and allowed to run for a few minutes and then wood is placed in one pocket and applied to the stone in gradually increasing pressures so that the friction of the stone on the wood tends to tighten the flanges. A word of caution—full pressure should not be applied abruptly, as it may force the stone to one side.

In starting up a new pulpstone or when the stone has been shut down for a long period, it is recommended that the stone be operated for several hours with a light load, gradually bringing it up to operating temperature and full load.

Some mills start up with a temperature set at approximately room temperature and then gradually bring the pulpstones up to operating temperature by raising the temperature 5°F. every half hour until operating level is reached.

For shutdowns of less than a week's time, operating temperature and load can be reached in a shorter time, depending on the initial temperature of the pulpstone and the shower water.

## PULPSTONE OPERATION

### Burring or Dressing

The burring or dressing operation is one of the most critical that faces the operator. It is imperative that the burring lathe be aligned and maintained as a precision tool. The burr fork, pin-holes, pins, bushings, or bearings and mandrel, should be maintained in as perfect mechanical condition and state of lubrication as possible at all times.

Routine conditioning of the pulpstone face should be done at intervals ranging from 24 hours to five days or more, depending on the desired pulp quality. Best results are generally obtained by several light applications of the burr rather than a single heavy application. Mills equipped with micrometer lathes seldom find that a burr penetration of more than 0.007 inch is necessary to maintain desired quality.

It is a good practice to have separate burrs and accessory equipment for each pulpstone to prevent the consecutive use of burrs of different degrees of sharpness. It is advisable to remove the complete burr assembly from the grinder after each use, for cleaning and lubricating, preferably with a pressure system so that the moisture is driven out of the bearing. The assembly then can be stored in a dry, clean compartment in readiness for the next application. This practice results in a burr saving and insures that the bearings or bushings are in top condition for each application.

The speed of traverse should be such as to cause the burr to move its own width every second or third revolution of the stone.

It is also good practice to maintain the bevel on the edge of the pulpstone as received from the factory. This bevel assists in starting the burr into the pulpstone and prevents chipping and breaking of the edges if the burr is allowed to run off. The bevel can be maintained by means of a burr fork or casting set at a 45° angle so that a diamond point burr can be applied to the edges of the stone. The same bent fork or casting can be turned 180° to bevel the opposite edge.

Some mills have instituted the technique termed "turning." This is the procedure whereby the stone face is cleaned off completely with a diamond point burr at regular intervals to prevent pitch and fines from accumulating in the abrasive structure. This also serves to clean off minor burns which may have occurred during normal operation and which were not noticed by the operator. This technique presents an entirely new surface for grinding and enables the operator to maintain uniform, high quality pulp. A clean stone will pick up water readily and will give it off centrifugally, thereby keeping the grinding temperature at safe and controlled levels.

### Temperature Control

The temperature of the mixture of pulp and water in the grinder pit should be maintained as uniformly as possible within normal operating range. This is accomplished best by an automatic temperature control regulator with the temperature sensing bulb properly positioned so that it does not become insulated by accumulations of shives and heavy stock. The bulb should be installed where it will accurately reflect temperature changes in grinding zone.

### Showers

Scientifically designed, properly located showers are very important to efficient, trouble-free pulpstone operation. Shower design, water pressure, and supply should be adequate to provide a uniform flow across the full width of the pulpstone face, over the edges and along the sides. This insures even temperature distribution and the complete removal of pulp from the face and sides of the stone. The showers extending over the sides of the stone serve several important functions. It assists the flow of pulp along the sides of the stone to the pit and prevents build up of slivers and pulp in this area. It also serves to keep the assembly of the stone, flanges, shaft and grinder case in a uniform stress free condition.

There are several good shower buttons on the market which provide a fan-shaped spray; these buttons should be so positioned that the fan-shaped spays overlap to cause a curtain of water across the full width of the stone. Some of these buttons are so designed that they can be readily cleaned and are to a degree self-cleaning. The volume of water and the uniformity of supply are the most important factors. A well-filtered white water at relatively high temperature and at a pressure upwards of 50 p.s.i. gives best results. Frequent inspection of showers by grindermen during each shift is strongly recommended to insure proper functioning. These showers are the chief insurance against burning, which might cause stone damage. Therefore, showers require constant attention. The automatic shower valve should be so adjusted that the water is never shut off completely. This can be accomplished by the stop on the valve so that it does not fully close or the bypass should be cracked open at all times. A sufficient volume of water should be available to the showers so that when the grinder is producing at maximum capacity, consistencies in the pit can be maintained at 2 per cent or lower.

### In the Pit

*Pit consistency* should be uniformly maintained at some point between 0.5 per cent and 4 per cent, depending on conditions and equipment. The ideal condition would be one where low consistency is maintained within extremely close limits. Low consistency is desirable since it insures adequate water for grinding. Screening efficiency is improved be-

cause no heavy undesirable lumps or bundles of stock are formed. Screen consistency regulation is also simplified with low grinder pit consistency.

*Low stone immersion* is a pit level which permits a minimum of stone in the pulp and water. Most mills have found that low immersion, 2 inches or less, has increased production with power savings. The power is maintained at most uniform level, and the temperature control is very responsive under these conditions.

Several mills in Europe and North America are operating with no stone immersion. This technique is called "pitless grinding" and as the term implies there is no pit beneath the stone. It is claimed that decided power economies, more uniform pulp and increased grinder capacities result. Pitless grinding should only be attempted after careful assessment of the equipment required to make it effective; e.g. adequate and properly positioned showers with ample water supply are a requisite to this concept of grinding.

*Shives and slabs* should be removed from the grinder pit frequently to prevent an accumulation that might cause damage to the stone. The finger bars on the grinder should be adjusted as close to the stone as possible at all times so that the shives and slabs will not be produced. Careful adjustment of finger bars, shive catchers and other similar devices result in higher yield from the wood and lessens the burden on the screen system.

## Load and Peripheral Speed

The trend toward higher production has placed loads on pulpstones as high as 7,000 horsepower and there are pulpstones running at a surface speed of 5,900 feet per minute. There are indications that the loads and speeds will go even higher. Peripheral speeds in excess of the recommended 5,000 surface feet per minute are possible under certain controlled conditions. The grinder manufacturer and your pulpstone engineers should be consulted before any move is made in this direction to insure you of the utmost in benefits and an adequate safety factor. Under maximum conditions such as mentioned above, the position of the showers, the quantity of water to maintain low consistence, becomes most critical. An emergency water supply to be automatically available in the event the normal shower supply is accidentally shut off will prevent severe burning of stones with consequent loss in production and pulp quality. The quantity of water in this case should be sufficient to give the operator time to shut the grinder down before the stones are burned.

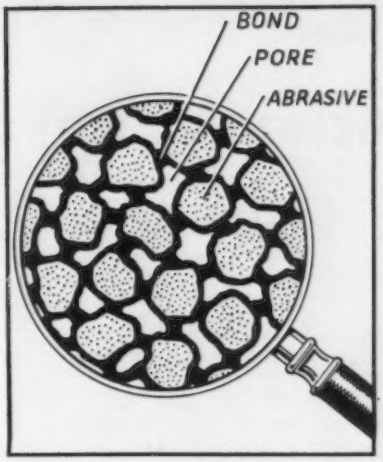



**Figure 4 is a blowup of an abrasive body. The bonding agent is a vitreous substance and is subject to cracking under sudden temperature changes.**

## Heat During Shutdown?

When the pulpstone is shut down for short periods, every effort should be extended to retain the heat in the grinder. Some mills accomplish this by raising the dam and leaving the hot stock in the pit. In other cases, the front of the grinder is covered so that cold drafts cannot strike the stone. It is the practice in some mills to inject a small flow of steam into the full grinder pit to maintain the temperature of the stone and assembly during shutdown. Any method whereby the heat is retained in the grinder is most advantageous to the mill, it permits faster startups and, under some conditions, even full load starting, without any loss of pulp quality and production. The retention of heat in the stone also serves to prevent stone damage from rapid cooling. It has been determined that the stresses built up in a pulpstone are most severe in the cooling off period. The economies of maintaining heat in the grinder during shutdown periods may be questioned but it should be borne in mind that the heat in the grinding operation is generated by application of energy in some form or other. During the shutdown the steam cost to maintain the stone temperature may run slightly higher than the electrical energy consumed in gradually building the stone temperature up to standard operating levels in normal practice, but the difference will be slight.

Longer or extended shutdown periods require certain precautions to minimize the possibility of damage to the pulpstone. The stone should be allowed to cool slowly so that no internal stresses are developed, and it should be protected from cold drafts, especially in the wintertime.

## Special Conditions

The abrasive segments are generally produced by the vitrifying or kiln-fired process and should be treated as any vitrified body such as glass. These products are subject to breakage when differential temperatures are set up in the body. It can be compared to a situation where a water glass is heated and then plunged into cold water, causing it to break, or where a hot liquid is poured into a cold glass. The breakages occur in these cases because of the temperature differential. The glass at one temperature is expanded equally in all directions but when a portion of the glass is subjected to a different temperature, it either wants to expand or contract in this particular area, therefore, cracks or breaks at the line of greatest temperature difference.

The abrasive body (refer to Figure 4) in a pulpstone which is composed of the particles of grit and of the bonding agent which generally is a vitreous or glassy type and is subject in some degree to the hazards of temperature differential outlined above. Therefore, every care should be exercised to prevent these differences from developing. As an example, a cold shower should not be suddenly applied to a hot stone as there is the danger of a temperature differential sufficient to stress the abrasive body to the breaking point. In another example, if the shower water should be stopped and grinding allowed to continue, this could cause a very high surface temperature which would then be much higher than the internal section of the segment and cause a differential sufficient to spall the segment. If a portion of the shower should become plugged, then there would be no water in one area and the above condition would apply. Stone damage frequently results from burns caused by the above condition. Foreign objects imbedded in the wood and accidentally placed in the grinder may cause a burned streak with the possibility of consequent damage.

U. S. observer gives a first hand report on . . .

# Interesting Technological Features Of Japan's Pulp and Paper Industry

**L. E. Eberhardt,**
Assistant to the President,
Bauer Bros. Co.,
Springfield, Ohio

- **Newsprint made with 40 per cent sodium sulphite hardwood pulp.**
- **50 per cent hardwoods used in kraft liner board operation.**
- **Newsprint made with 40 per cent cold soda hardwood pulp.**
- **Plan new 300 T/D continuous NSSC pulp mill for 9-pt.**

These are some of the highlights observed in a recent tour of the Japanese pulp and paper industry. Technological advances are being rapidly applied by all the major Japanese paper companies as their production is expanded, and they gear their pulp mills to utilization of available hardwood resources.

In discussions with the many operators, technicians, and engineers in Japan, it is evident that they are keenly interested in all the latest, most efficient, and continuous means of producing the wide variety of pulps required for their paper industry. They know that utilization of hardwoods is required to bring their limited timber resources into a balanced wood species situation.

The top management of the industry of Japan is interested in higher yields, hardwood utilization, modernization, and increased efficiency. The industry is more than willing to furnish the capital required to initiate projects and modernization of existing facilities. The following are some of the latest developments:

### Daishowa Paper Mfg. Co.

The Daishowa Co. Fiji mill at Yoshiwara has the distinction of installing the first Bauerite cold soda pulp mill in Japan, which was put into operation in November 1957. This unit consisting of Rapid Cycle digesters, Pressafiners, double disk refiners, "pump-through" refiners, and Bauer cleaners produces 60 metric tons per day of hypo-chlorite brightened cold soda pulp for newsprint.

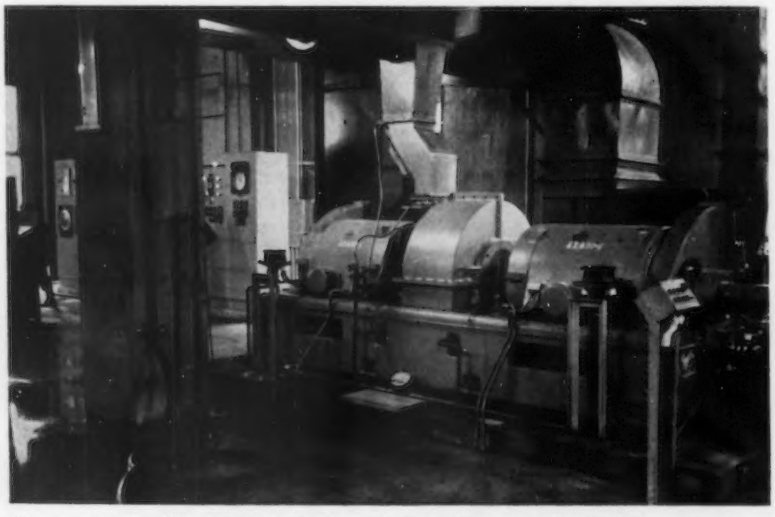
This mill utilizes a machine furnish of approximately 40 per cent brightened cold soda pulp, 50 per cent groundwood, and 10 per cent hardwood kraft pulp, and the machine operates at approximately 1500 feet per minute.

The Daishowa Co. is also building a modern kraft and newsprint mill near Sapporo, Hokkaido. The mill will be equipped with a new 212-inch trim Voith machine designed for a top speed of 2500 f.p.m. To meet the hardwood pulp demands of this machine, they are installing Bauerite equipment for producing 120 tons per day of cold soda or NSSC high yield pulp.

The excellent progress of this company in modernization and expansion is under the direction of C. Saito, president, ably assisted by his sons.

### Honshu Paper Mfg. Co.

The Honshu Paper Mfg. Co., Kushiro, Hokkaido, has a very modern 300 metric ton kraft liner board mill. The paper machine is a 280-inch trim Beloit high speed machine,



Primary double disk refiner at Daishowa's Fiji mill is part of cold soda pulp system.

and pulp mill is equipped with a Kamyr continuous digester system. This mill, which was put on stream July 1959, compares very favorably with the most modern being built in the U.S. today. It is certainly a credit to the excellent engineering staff of the Honshu Co.

From a technological standpoint perhaps the outstanding feature of this mill is its hardwood utilization program which utilizes 50 to 70 per cent hardwood pulp in its liner board sheet.

The mill is also unique in that part of the construction program includes very modern apartment houses and dormitories for all employees and their families. This modern housing with central heating throughout is only one indication of the rapidly advancing Japanese standard of living.

During this visit negotiations were completed for a 300-ton neutral sulphite semi-chemical pulp and paper mill to parallel the company's liner board operation. The pulp mill equipment will consist of two Bauer M&D digesters, Bauer double disk primary refiners, Bauer "pump-through" refiners, and Bauer cleaners ahead of the Beloit design paper machine. The paper machine is being manufactured in Japan by the Mitsubishi organization.

Wood species available to the mill are typical of Hokkaido Island hardwoods and consist of 70 per cent birch, 25 per cent alder, and the balance mixed northern hardwood species. The end product of the expansion is to be high grade nine point corrugating medium for the Japanese market.

**View of Honshu Paper Mfg. Co. This modern mill manufactures 300 T/D of kraft linerboard. Soon to be installed is a 300 T/D NSSC pulp and paper mill for 9-pt. corrugating medium. In the background can be seen modern apartments for the company's employees.**

### Tohoku Paper Mfg.

In May, 1959, the Tohoku Co. in Honshu also put a 30 metric ton/day Bauerite cold soda hardwood pulp mill into operation producing pulp for addition to their newsprint paper machine furnish. At the present time, this installation is also being expanded with start-up slated for mid-summer of 1960.

### Jujo Paper Mfg. Co.

In March of 1958, Jujo Paper Mfg. Co., Kushiro, Hokkaido, started up a 40 ton per day pulp mill consisting of Rapid Cycle digesters, Bauer double disk refiners, "pump-through" refiners, and cleaners to produce sodium sulphite hardwood pulp for use in the newsprint furnish on their high speed news machine.

This operation was highly successful and they were able to run the paper machine at speeds over 1950 feet per minute with a sheet containing 40 per cent of hardwood pulp. (Balance of furnish was 10 per cent sulphite, and 50 per cent ground

**Buildings under construction at Jujo Paper Mfg. Co. will house another news machine and facilities for pulp production.**

Author Lee Eberhardt views digester discharge valve and liquor accumulator which are part of system producing hardwood pulp for use in newsprint furnish at Jujo.

wood.)

Based upon this experience, this company is installing a 274-inch trim machine designed for 2500 f.p.m. operation. The paper machine is being built in Japan by The Mitsubishi organization. The hardwood plant is being increased to 200 metric tons per day capacity. The Bauer equipment for the expanded unit has been shipped, and will be put on stream prior to April 1, 1960.

The Jujo-Kushiro mill upon completion of this expansion together with other improvements and modernizations under way will be one of the most modern and efficient newsprint producers in the industry. These advances are a credit to I. Nishi, chairman of the board of Jujo, and J. Nishioka, M. Maki and M. Nakayama of the Kushiro Mill, and their technical staff.

High speed newsprint machine at Jujo Paper. Speeds over 1950 f.p.m. have been attained with sheet containing 40 per cent hardwood pulp.

### Daiken Wallboard Industry

In mid-year 1959, Daiken Wallboard Industry, Ltd. at Okayama, started producing a wide variety of hardboard, insulation board, and decorative products. The raw materials are hardwood and softwood chipped waste from the operation of Daiken Lumber Co.

The equipment consists of Carthage chipper, Bauer Grenco continuous digester, Grenco valves, double disk refiners, "pump-through" refiner, Dorr-Oliver cylinder forming machine, Coe dryer, Mereen Johnson finishing equipment, and Washington Iron Works multi-platen hardboard press. This train of equipment provides a very efficient and versatile combination board plant that is turning out very high quality end products.

Cold soda pulp mill at Tohoku Paper Co. produces hardwood pulp for addition to newsprint furnish.

# Albany Felt Holds Technical Meeting For Paperboard Men

**This round table conference led to interesting and practical discussion of finish requirements, felt operating size, fiber shedding and synthetics.**

Paperboard executives and Albany Felt Co. officials thoroughly explored the complexities of papermaking felt usage in the paperboard field during a two-day round table conference at the Albany, N. Y., plant. Among major topics covered were finish requirements, felt operating size, fibre shedding, and felt washing. Planned by James E. Smith, sales manager, and moderated by Larry Woodside, chief service engineer, the round table was attended by top paperboard executives from mills throughout the United States and Canada, and by executives, service engineers and designers from Albany Felt's staff.

### Finish Requirements

Finish requirements on multi-cylinder board machines was a topic evoking considerable discussion, particularly in view of the highly competitive market for high finish board today. D. F. McConaughy, Albany Felt designer, explained the delicate balance in felt design between strength, openness and finish and pointed out in order to provide a felt that would give the maximum finish, a felt designer automatically had to sacrifice some of the strength and/or drainage characteristics of the felt. In other words, paperboard manufacturers should not expect the felt designer to provide a felt that would give him maximum strength (long life), openness (drainage), and at the same time excellent finish. In order to manufacture a felt that would provide the necessary cushion and bulk to attain good finish, it is necessary to use finer wools, finer yarns and more of them, which in itself tends to close the felt slightly.

There was considerable discussion and controversy about felt design and finish requirements in relation to how much synthetic content could be incorporated in a felt before it affected the finish. Some mills have been able to run felts containing as much as 25 per cent synthetics; others have found it necessary to reduce the synthetic content to 10 per cent. Again, it is a question of which is more desirable—long felt life, or good finish. These two properties in a felt are diametrically opposed. A superintendent from Illinois cited a case where their bottom felts gave them satisfactory finish and contained 18 per cent synthetic content. They attempted to better their finish by trying an all wool felt (with a subsequent drop in felt life). Since no improvement in finish resulted, they went back to the synthetic content design.

Larry Woodside said it was his experience that the per cent of synthetic content affects finish adversely only if the machine is not equipped to handle the extra water carried by the felt. He remarked very often a chemical treatment can off-set the hardening effect of the synthetic yarns and thus compensate for the loss in finish normally experienced with the synthetic content felt. Another important factor in achieving good finish is the condition of the paperboard machine itself. If the machine does not "turn over easily" the felt manufacturer must provide a rugged (and consequently somewhat coarser) bottom felt to withstand the "pull" of the machine.

It was also agreed that another point to remember is the hardness of the rolls. Mr. Woodside reported he had heard some mills were using rolls with a plastometer reading of 60 and 70, when normally he would not recommend going to a roll softer than 45. However, the superintendent of a large mill in New Jersey said it was his firm belief there was no danger in going to fairly soft rolls and that they definitely helped finish. He did say, though, he recommended larger diameter rolls because a small roll was apt to cause crushing at the center of the nip. He indicated he preferred plain primary rolls 16 inches or even 22 inches in diameter.

Stock preparation also plays an important part in finish, as indicated by the superintendent of a mill in Arkansas. He said they were using an average of 40 per cent hardwood, and had found the more hardwood they used, the better the formation and finish.

### Felt Operating Size

On the general topic of the control of felt operating size, questions arose about the relationship between running length and operating tension of multi-cylinder bottom felts. A company designer explained the running length of a multi-cylinder bottom felt is a direct function of tension or, put another way, the amount of tension "fulled" into the felt in manufacture, determines what length the felt will run on the machine. If the tension is too high, the felt will run shorter. Conversely, if there is not enough tension built into the felt, it will run too long, or "stretch" on the machine.

Naturally, the correct tension for any given felt is the tension that will allow it to run at its manufactured length on the machine, bearing in mind the manufactured length may or may not be the specified order size. In fact, service engineers said probably no two felt

manufacturers make a felt for the same position in exactly the same size, even though the ordered size may be the same.

One case was cited where Albany Felt had been making multi-cylinder bottom felts for a certain mill for a number of years. The mill complained the felts were too wide. The running length of the felts was checked and it was discovered they were being run considerably short of manufactured length. Albany Felt persuaded the superintendent to run the felt at the proper length. As a result, the width was reduced to the proper size.

It was agreed another danger in running the felt short of manufactured length was the bagging developing as a result of the uneven warp load across the entire width of the felt. In this connection, Mr. Woodside strongly recommended periodic length measurements to be taken with a felt measuring wheel, such as the Jagabi Tachoscope.

The correct procedure for starting up a multi-cylinder top or bottom felt was also discussed. Mr. Woodside emphasized the importance of installing a felt in the dry state with the jack fully extended so the felt is snug. Then, as the felt is wet up all the way across its width, the felt can gradually be eased back, but only to a point as close to the manufactured length as possible. It was thought that most superintendents wet up the felts when they are too slack, and as a result, the felt shrinks in far short of its manufactured length and in many cases this can cause bagging and othed difficulties.

Another problem that seemed to plague many paperboard mills is controlling the blue line. Of primary importance is the maintenance of correct crown on the main press and primary rolls. Still another consideration is the use of worm rolls. In addition to these two applications, the Mount Hope roll has been used most advantageously in many mills to accomplish the same thing. This has the advantage of being flexible enough to adjust to varying conditions.

One superintendent said when a top felt is installed in his mill and they run into crushing at the edges, he has found he can temporarily remedy the situation by tightening the felt. Mr. Woodside said this might be explained because any new felt is bound to carry more water than one that has been on the machine several days. If the crown of the press rolls is not perfect (i.e. not sufficiently crowned), crushing along the edges could easily develop. However, he said by tightening the felt you reduce the over-all bulk of the felt so it will carry less water and therefore, less edge crushing would be experienced.

Mr. Woodside emphasized, however, tightening the felt was only a temporary remedy and that only by proper roll crowning would this edge condition be minimized.

***"Some mills have been able to run felts containing as much as 25 per cent synthetic; others have found it necessary to reduce the synthetic content to 10 per cent. It is a question of which is more desirable—long felt life, or good finish."***

### Proper Application of Mt. Hope Rolls

Several of the paperboard executives expressed interest in the general design modifications necessary for felts when they are initially used with Mt. Hope rolls. Albany Felt Co.'s chief designer, S. Stuart Engle, reported that generally speaking the initial step when redesigning felts for use with Mt. Hope rolls is to reduce their width to compensate for the natural widening action of the Mt. Hope roll. The amount of this reduction will depend on the setting of the Mt. Hope roll itself and its subsequent effect on felt width. Some Mt. Hope rolls are arranged to widen the felt only two to three inches, while others will effect an increase as much as two feet.

***"Generally speaking the initial step when redesigning felts for use with Mt. Hope rolls is to reduce their width to compensate for the natural widening action of the roll."***

However, Mr. Engle also reported sometimes the basic design of the felt has to be changed to offer more bulk to counteract the widening and thinning effect the Mt. Hope roll may have on the felt. This was true of a mill on the West Coast where the Mt. Hope roll thinned down the felt to such an extent that it did not have enough "body" to hold the load through the primary presses. A Mt. Hope roll will spread the felt out so there are actually less warp yarns per inch than its original state. Sometimes the felt has to be built up to offset this.

Besides the possibility of these design changes, it was agreed there are certain necessary precautions that should be taken by the paperboard mill when installing a Mt. Hope roll. First, it was the consensus that it was most important to thoroughly train operating personnel in the applications of the Mt. Hope roll both before its installation and while in use.

Second, many mills have found it advisable to have a spare Mt. Hope roll on hand so when the one on the machine is taken out for recovering or repairs, the spare can be installed. Otherwise, the felt might be too narrow when running without the spreading action. This idea was confirmed by the superintendent from a paperboard mill in Arkansas who has three Mt. Hope rolls in his mill; one for the top felt, one for the bottom, and one spare roll.

It was generally agreed there were several extremely beneficial advantages connected with the use of the Mt. Hope roll: (1) It can control felt width as well as the guide line better than other devices; (2) it can be of valuable assistance in keeping the felt open and clean; (3) further, the vice president of a large paperboard company in Connecticut reported that with their three roll unit their felt works constantly, loosening up the fabric, and consequently, providing much better drainage. (Even the one roll unit is a very effective conditioner when it is directly preceded by a Scofield Conditioner or shower pipe.)

### Fiber Shedding

Fiber shedding is a curious phenomenon because it often seems to come and go without apparent control of either the felt manufacturer or paperboard maker. However, it was agreed certain machine conditions could be a contributing factor to fiber shedding. Among these are slippage in the press rolls, excessive crowning, worn or defective rolls, excessive weighting. Even bacterial action may cause deterioration and loosening of the fibers.

This problem can be minimized both by corrective maintenance measures within the paperboard mill and in the finishing techniques by the felt manufacturer. In the latter case, Stuart Engle reported there are special finishing procedures that can be used to reduce the danger of fiber shedding to a minimum, particularly when it is experienced during the first eight to ten hours of the felt's operation.

One general superintendent from Texas said they had found by using napless felts they had no difficulty whatsoever with fiber shedding. Z. J. Chagnon, vice president of Albany Felt, said paperboard mills in England are using napless felts with a great deal of success. Oddly enough, however, Stu Engle reported that on extensive tests at Albany Felt Co., napless felts actually have just as many fibers available for shedding as a napped felt. He suggested that perhaps with a napless felt the available surface fibers disappeared more readily, and hence fiber shedding was not as noticeable as with napped felts.

Still another theory was that the increased use of synthetic fibers in recent years might be the cause of more fiber shedding. This was explained because the synthetic fibers do not "full" or felt with the wool fibers. Hence the wool fibers are not as bound together as they are in all-wool felts. Consequently, they are more readily extractable from the body of the felt.

***"Fiber shedding is a curious phenomenon which can be minimized by corrective maintenance measures within the paperboard mill and in the finishing techniques by the felt manufacturer."***

### Effect of Nip Pressure

Several questions were directed by the paperboard executives to the subject of nip pressures on the structure of felts. Mr. Engle reported warp or filling can be definitely weakened by too heavy press loading. This damage, he said, would first show up in the filling yarns. Later, as the filling yarn became worn out because of this high nip pressure, even the underlying warp yarns would be exposed and damaged.

Questions were raised on the effect of a too small roll crown or too much crown and high compression. Mr. Gordon brought out two graphs of warp and filling wet strength tests which showed how felt structure can be definitely affected. On a machine without sufficient crown, the graph had a rainbow shape indicating the strength of both the warp and filling along both edges had been drastically affected. The other graph, "U" shaped, dramatically demonstrated how much weaker the felt was in the center from too high a crown and too heavy weighting.

It was suggested taking nip impressions at regular intervals might permit machine operating personnel to anticipate these conditions. A superintendent from a paperboard mill in Arkansas reported they took nip impressions every six months across the entire width of the machine, with a special type of carbon paper. By applying a standard weight (40 lbs. air pressure) each time they took the impression, they were able to accurately determine the condition of their rolls.

However, Mr. Woodside emphasized this type of nip impression check can only be used as a guide since it is a static measurement and would change when the machine was in operation. It was agreed checks of this nature should be taken periodically to avoid the more severe conditions caused by incorrect press crowning.

***"It was suggested taking nip impressions at regular intervals might permit machine operating personnel to anticipate weakening of the felt due to improper roll crowning."***

### Felt Maintenance

One paperboard executive reported that all too frequently top or bottom felts are damaged because of matter catching underneath the slice boards. A streak is worn in the felt before the operating personnel can discover the difficulty. He asked what could be done to prevent this.

The superintendent of a large paperboard company in New Jersey said before they start up a machine they raise all slice boards and let the felt run two or three revolutions before lowering the slice boards for actual operation. Any foreign objects that might be on the felt thus are carried off and thrown into the pit before damage is done.

The superintendent of a paperboard mill in Massachusetts reported another good way of preventing occurrences of this nature is to make sure the machine tenders are alert, double-checking the machine not only before starting up, but also during its operation.

It was also suggested any metal parts rusting off could be replaced with stainless steel components which would minimize the possibility of felt damage to a great extent.

The superintendent of a paperboard mill in Pennsylvania was interested in the possibility of mending felts that had been cut or worn. Chief Designer, Stuart Engle said on any small tears or worn spots, the average machine tender could easily mend the felt himself by following the procedures outlined in the company's new technical handbook, "Improved Felt Performance." He also mentioned the company has a new felt mending kit available which is free of charge to any customer who needs it.

In the case of more extensive damage, he suggested a sales engineer be consulted to see if it is feasible to have the mending done by an expert at the plant in Albany. There is a limit to the size of the hole that can be mended. In many cases it is not practical to have a severely damaged

felt mended unless it still has considerable life left in it.

### Synthetics

Mr. Engle said several years ago some felt companies were promoting felts with higher percentages of synthetic content as a panacea. This practice has been largely discontinued because of the difficulties encountered with extremely high percentage synthetic felts. He reported the majority of multi-cylinder board machine felts made by Albany Felt today contain 20 per cent or less synthetic content and it is the feeling of their design department that anything over 25 per cent on the average machine is often a waste of synthetics.

The vice president of a paperboard company in Connecticut was interested in the use of synthetics for top felts on paperboard machines. Mr. Woodside explained the majority of top felts for a paperboard machine today are made with synthetic content to increase resistance to frictional wear and provide long life. However, he mentioned a higher per cent of synthetics is used in the construction of bottom felts because bottom felts do more mechanical work.

Mr. Engle stated occasionally a 50 per cent synthetic plain weave bottom felt can be used advantageously on multi-cylinder board machines making .009 point board, but sometimes the higher per cent synthetic felts tend to pack down and become thinner, losing their drainage characteristics.

### Returned Samples Helpful

The question was raised as to whether uneven residual strength in warp and/or filling indicated abrasive wear. Mr. Engle confirmed uneven residual strength in warp and filling across the width of the felt definitely indicated a need for a corrective machine adjustment. He mentioned the Albany Felt Company Customer Service Laboratory had often pin pointed certain machine conditions affecting felt performance.

He cited several cases where residual strength profile tests of warp and filling had been made from used samples of felts sent to Albany Felt. When these profiles had been returned to the paperboard mill, the operating personnel were able to spot the machine condition causing the difficulty. Laboratory analysis of returned felts can be useful for many other reasons, among them: the detection of bacterial damage, testing filling materials, and determining the cause of fiber deterioration.

## PJT NEW LITERATURE

**Fuller**
**Equipment**

Discusses applications and performance characteristics of equipment for the process industries. Also explains operating principles and includes photographs of typical installations. Bulletin G-3C. Fuller Co., Catasauqua, Pa.

**Kinatrol Adjustable**
**Speed Drives**

Contains information on the eddy current coupling operating principle, as well as data on torque capabilities, regulation and operation of the entire packaged drive. Charts indicate drive unit dimensions, ratings and data, as well as dimensions of the control enclosure and operator's control. Bulletin GEA-6885. General Electric Co., Schenectady 5, N. Y.

**Leak Detectors**
**Type H-2 and H-5**

Gives detailed instructions on use of halogen leak detectors for finding leaks in enclosures that can be pressurized. Also includes discussion of system preparation, testing procedures, quantitative measurement techniques, and calibration. Bulletin GET-2936. General Electric Co., Schenectady 5, N. Y.

**Testing**
**Equipment**

Data sheets illustrating and describing testing machines for paper, paperboard, fiberboard for stiffness, resillience etc. Testing Machines Inc. 72 Jericho Turnpike, Mineola, L. I. N. Y.

**Pozzolith**
**Concrete**

Photographs and job reports present a clear picture of the wide variety of uses for this relatively new and versatile building material. Bulletin MBR-P-14. Master Builders Co., Cleveland 3, Ohio.

**Sandy-Hill**
**Fourdrinier Parts**

Shows several basic types of forming boards, deflectors and deckles. Among the designs presented should be found a type to meet any need. Brochure. Sandy Hill Iron & Brass Works, 27 Allen St., Hudson Falls, N. Y.

**Carton**
**Stitchers**

Describes their carton stitcher that makes staples with crowns up to 1⅝ inches wide from roll wire. These giant-size staples cut in half the time required for carton closure and make a more rigid finished package. Bulletin. Ideal Stitcher Co., 2323 N. Knox Ave., Chicago 39, Ill.

**Clarklift Yardlift**
**Models**

Contains dimensional and engineering data as well as complete specifications on two gas powered fork trucks designed for outside handling jobs. These trucks have capacities of 18,000 and 20,000 lbs. Bulletin SS-1971. Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich.

**Exide Charge**
**Control Model MP-3**

Features instructions and diagrams showing how to connect and use the unit for taper-rate, two-rate or modified constant-potential charging. Schematic charts illustrate typical uses and additional sketches show dimensions and other physical data. Form 5092. Exide Industrial Div., Electric Storage Battery Co., Rising Sun and Adams Aves., Philadelphia 20, Pa.

**Gravi-Decker Claims**
**New Cylinder Mould**

Provides specifications and engineering drawings. Also tells how it is adaptable to any mill layout and has many applications. Bulletin Koehring-Waterous Ltd., Brantford, Ont., Canada.

**The Problem of**
**Absenteeism**

75p pamphlet by Marjorie Brookshire. Price 75c. Available from Institute of Industrial Relations, University of California, Los Angeles, Calif. Discusses absenteeism in all phases, both as a challenge to management, a problem in the U. S. and around the world.

**Rigidon**
**Plastics**

Gives data on standard types of Rigidon, physical properties, chemical resistance, as well as illustrated sales copy on numerous products. Bulletin B-500. Heil Process Equipment Corp., 12901 Elmwood Ave., Cleveland 11, Ohio.

**What You Should Know**
**About Career Opportunities**

Outlines career opportunites in the pulp and paper industry and highlights several of the many facets of the technical work done by pulp and paper companies and allied organizations. Also presents a background history of the industry and its growth, a projection of future potential, and a detailed analysis of the specific types of career opportunities open to graduates with science and engineering degrees. Available upon written request from the Technical Assn. of the Pulp and Paper Industry, 360 Lexington Ave., New York 17, N. Y.

# PJT NEWS OF SUPPLIERS

**The Glidden Co.'s** Chemicals Division dedicated its new Inorganic Research and Development Center February 3. Housed in a new two-story building at Glidden's Adrian Joyce Works, one of the nation's largest titanium dioxide manufacturing facilities, the center consolidates research, product development and technical service facilities previously located in units scattered throughout the country.

The Glidden Co. believes that one of the most promising potential markets for titanium dioxide lies in the papermaking industry, and this laboratory is equipped with papermaking and coating facilities to develop pigments of superior quality for these end-uses.

**H. K. Porter Co., Inc., Disston Division** has named William J. Gordon representative in the San Francisco Bay area. He will work out of the San Francisco office of Disston and will be responsible for hardware and industrial sales in the area.

**Buffalo Forge Co.** has elected Theodore M. Dillaway as vice president and George P. Schivley as vice president of manufacturing. Mr. Dillaway continues as a director and secretary of the company and Mr. Schivley as a director.

Mr. Dillaway joined Buffalo Forge in 1940, and was elected secretary and a director in 1958. He has been a director of Canadian Blower & Forge Co. since 1953 and of Canada Pumps, Ltd., since 1958. Both companies are Buffalo subsidiaries.

Mr. Schivley has also been with the company since 1940. He joined the firm as general superintendent in 1940, became plant manager in 1951, director of manufacturing in 1955 and was elected a director in 1959. He has been a director of Canadian Blower & Forge since 1958.

**Cooper Alloy Corp.,** Hillside, N. J., has acquired additional plant space according to Harry A. Cooper, president. The space, an area of 15,000 square feet on Glenwood Avenue in Hillside, N. J., has been leased on a long term basis from Ceco Steel Co.

This new space will be used to warehouse many company products and a shipping department will be established for the handling of the company's valve and fitting products. Close to central trucking sources the space is also serviced by a railroad siding so that both means of rapid transportation can be employed.

**Jefferson Chemical Co., Inc.,** has appointed R. Harry Borden district sales manager, Houston district, with headquarters in Houston, Tex. Stanley W. Cairns has been named district sales manager for the Philadelphia district, with headquarters in New York City.

Until his current pomotion, Mr. Borden had been employed as salesman for Jefferson in the Southern Region, from 1957. Prior to joining the company that year, he held posts of salesman and assistant secretary of Dixie Chemical Co.

Mr. Cairns has been with the company since 1952 as salesman in New York State. From 1952 to 1954, he served in the U. S. Navy as an aviator, and re-joined the company in 1958 as salesman for the Eastern Region.

**Joseph T. Ryerson & Son, Inc.** has appointed Harold J. LeBeck assistant manager of the industrial plastics and bearings division. His headquarters are in the company's general office in Chicago.

Mr. LeBeck has been with Ryerson since 1947. He served as a sales representative for industrial plastics and bearings in the Philadelphia and New York areas prior to becoming assistant to the manager of the division in 1956.

**Paslode Co.,** Chicago, Ill., a division of Signode Steel Strapping Co., manufacturer of a complete line of staplers and supplies, has elected Harry C. Lingle vice president in charge of engineering and production.

The appointment of Mr. Lingle reflects Signode's current program to create new products through engineering development and research and to expand its manufactured line.

H. C. Lingle

G. F. Doria

**U. S. Stoneware Co.,** Akron, Ohio, has appointed Gabriel F. Doria technical representative. Mr. Doria will work out of U. S. Stoneware's New York City offices, 60 East 42nd St.

For the past three years Mr. Doria has been a sales engineer for Graver Water Conditioning Co. Previously, he had served as a chemist with Bennett's Chemical Distributors Co. and in laboratories of Tide Water Associated Oil Co. and Dodge & Olcott Co.

**The Borden Co.** has acquired the business of the Commercial Ink and Lacquer Co. of Fair Lawn, N. J., and Whitehouse, Ohio.

The new unit will be formally known as the Ink and Lacquer de-

partment of The Borden Chemical Co., a division of The Borden Co. No major change in policy or personnel is planned other than the appointment of a general manager who will assume full control.

Commercial Ink and Lacquer Co. is a manufacturer of gravure and flexographic printing inks and varnishes which are used primarily by the packaging, laminating, and furniture finishing industries.

**Ferguson Gear Co.**, Gastonia, N. C., announces another in a series of steps toward maintaining maximum specialization in the manufacture of gears for the paper industry.

With the installation of the Jones and Lamson PC-14 optical comparator, Ferguson is now able to designate gear tolerances to most exacting manufacturing specifications. The PC-14 comparator brings into sharp focus many facets of quality gear inspection which cannot be measured or compared by any other means. Thus, through the use of J & L technology, Ferguson Gear offers a vital quality control service which adds immeasurably to its reputation as a specialist in quality gears for the paper industry.

GENERAL SALES MEETING, Geigy Dyestuffs Division. Seated, l. to r. are: J. J. DeJongh, New England—New York state; S. S. Harkavy, Director, Paper Department; D. J. Nixon, New York—Penjerdel; D. P. Fessia, South—Ohio Valley. Standing: F. G. Thwaites, Ontario—Western Canada; E. B. Lindquist, Los Angeles, Calif.; D. W. Kimsey, Portland, Ore.; R. W. Redston, Canada; R. G. Carr, Chicago, Ill.; G. W. Wilkie, Montreal, P. Q., Canada. Missing from photo is H. H. Gottsleben, Appleton, Wis., who covers Wisconsin—Minnesota—Michigan area.

**Geigy Chemical Corp.'s** Dyestuffs Division held a four-day meeting, attended by members of the sales force, divisional branch managers and management, at the Seaview Country Club, Absecon, N. J. Discussions were held covering sales products and new products to be released.

During the meeting an inspection was made of manufacturing facilities at Toms River, N. J.

F. A. Leser, Jr.

H. C. Mayhew

**Samuel M. Langston Co.**, Camden, N. J., announces that H. Clifford Mayhew, vice president-customer service, has retired after 35 years with the company and moved to Vero Beach, Fla., where he has built a new home.

In announcing Mr. Mayhew's retirement, company president Bryant W. Langston said customer service is now under direction of Fred A. Leser, Jr., a sales engineer with Langston for eight years. Mr. Leser has been shifted to Camden from the Chicago office.

**L. Sonneborn Sons, Inc.**, petroleum refiners and chemical manufacturers, has elected Lawrance Spirer treasurer. Henry Sonneborn III, who formerly served as treasurer of the company, now becomes vice-president and secretary.

**Beloit Iron Works** announces the appointment of Rudi L. Kutter as export sales manager.

Mr. Kutter is well known to the world's paper industry through his 33 years' association in the machinery building field. It was pointed out that Mr. Kutter's appointment as export sales manager will bring even closer cooperation between Beloit, its afficiates and licensees throughout the world as well as increased service to Beloit customers.

**Koppers Co., Inc.**, Metal Products Division, announces the appointment of Archie Cullen as Western district service engineer for Koppers container machinery department, maker of Hooper and Swift equipment. Mr. Cullen has been factory service representative for Koppers Swift plant at Bordentown, N. J. He will be supervised by Paul Spitler, Western district sales engineering representative of Koppers container machinery department whose offices are in Los Angeles. Mr. Cullen, however, will be headquartered at Koppers offices at 55 New Montgomery St., San Francisco. He will be readily available for service to container industry plants in all 11 Western states. His duties will include consulting, supervision of erection of new equipment and the prompt procurement and installation of repair parts.

R. L. Kutter

J. S. Hamilton

**Potdevin Machine Co.**, Teterboro, N. J., has named James S. Hamilton, assistant to the president, vice president in charge of sales of Potdevin's bag machine division.

During his 25 years with the company, Mr. Hamilton served as salesman, advertising manager and, recently, assistant to the president.

**Frank B. Green, Inc.**, 112 Chester Avenue, Massapequa Park, L. I., N. Y. has purchased from Sprout Waldron & Co., Inc., Muncy, Pa., its Continuous Digester. By special arrangement Sprout Waldron will continue to manufacture the screw feeders, rotary valve feeders, and dischargers for Frank B. Green.

Frank B. Green will offer several types of digesters to the industry, thus providing for the first time a complete line of Continuous Digesters for all requirements in the cooking of wood pulp.

# PIONEERS IN PULP AND PAPER LOCATIONS

For more than a quarter of a century the development of the pulp and paper resources of the Seaboard Southeast has been one of our specialties. During this time we have assisted many of the country's leading pulp and paper companies which have built plants in this area.

# CHOICE SITES AVAILABLE

Over the years we have made intensive study of the territory and have catalogued for ready reference specific data on outstanding locations for the manufacture of pulp and paper as well as for converting plants. Reliable information on choice sites will be furnished interested prospects on request.

# SUPPLIERS TO THE INDUSTRY:

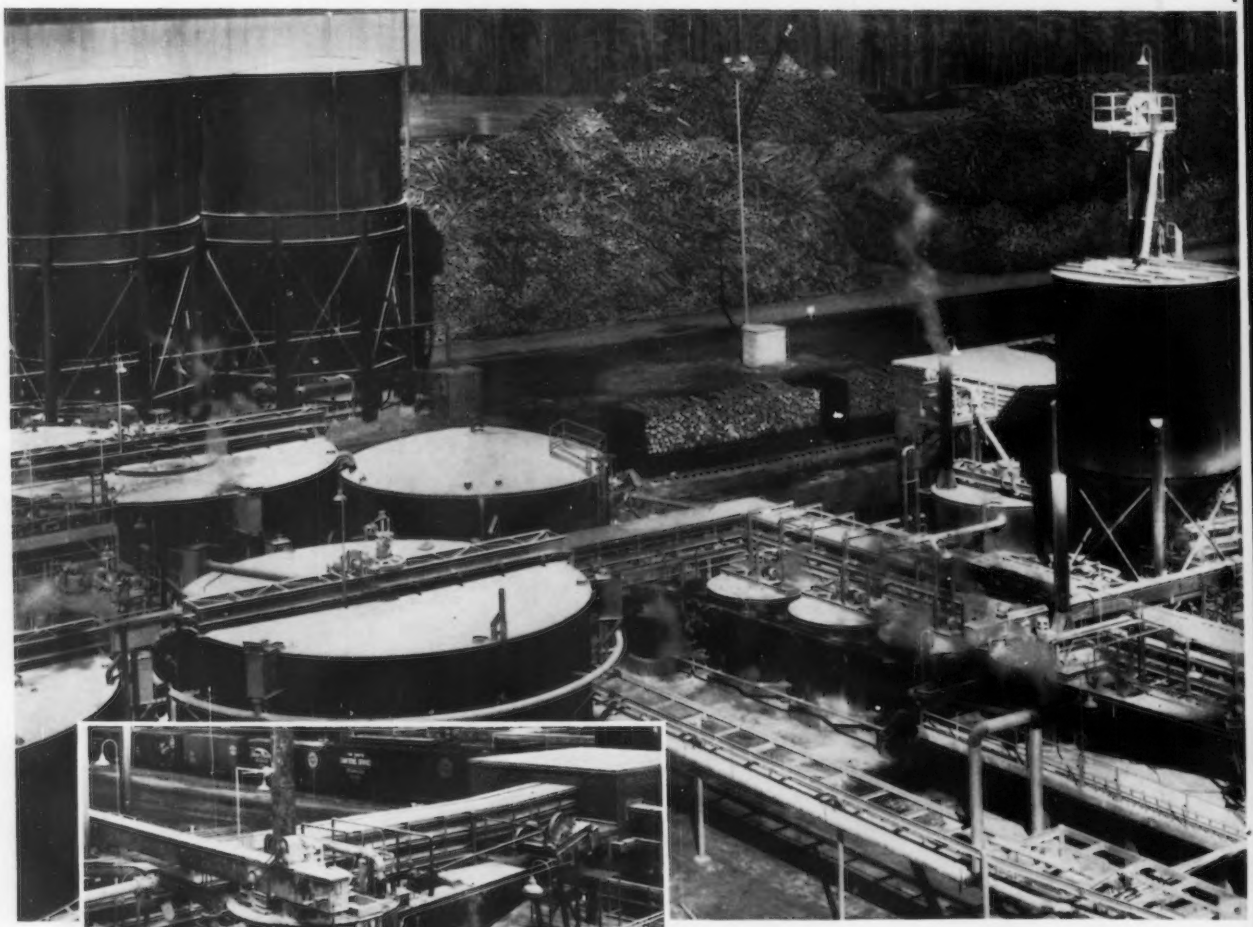
A plant or distribution facility in the Seaboard Southeast will place you in the heart of this rapidly-growing market. Let us submit details on some of the excellent sites strategically situated for supplying the pulp and paper industry.

**Address in confidence:**

**Warren T. White**
**Assistant Vice President**
**Seaboard Air Line Railroad Company**
**Richmond 13, Virginia**

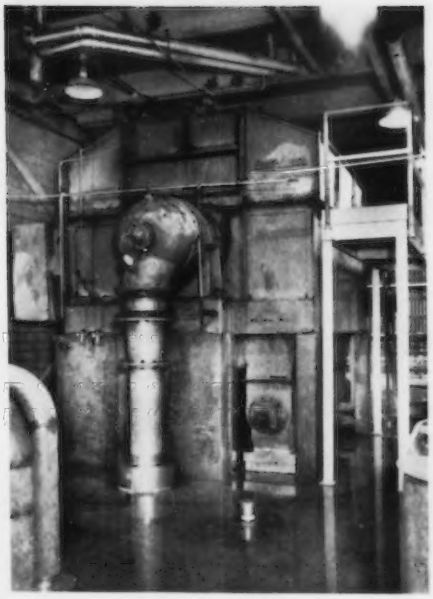
*How Dorr-Oliver equipment helps*

# MARATHON SOUTHERN GET MAXIMUM SAVINGS in new Naheola (Ala.) mill



DORR CONTINUOUS RECAUSTICIZING SYSTEM contributes to economical operation at Naheola through efficient recovery and recycling of soda chemicals for re-use. The Dorr System is recognized as the standard chemical recovery process for the alkaline pulping industry. It delivers clear white liquor of uniform causticity to the digester and holds soda losses to a minimum.

DORRCO SLAKER, installed at the lime slaking station of the recausticizing system, slakes and blends makeup lime with the overflow from the Primary Slaker, at the same time washing and removing grit.

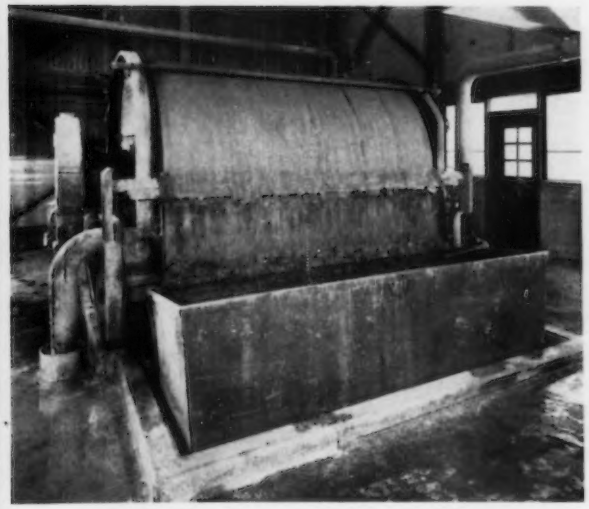


AMERICAN DISC-TYPE SAVEALLS (2 installed), supplied by Dorr-Oliver, provide for maximum recovery of pulp fibers from white water. Features include large filter area and capacity with minimum floor space and continuous, fully automatic operation.

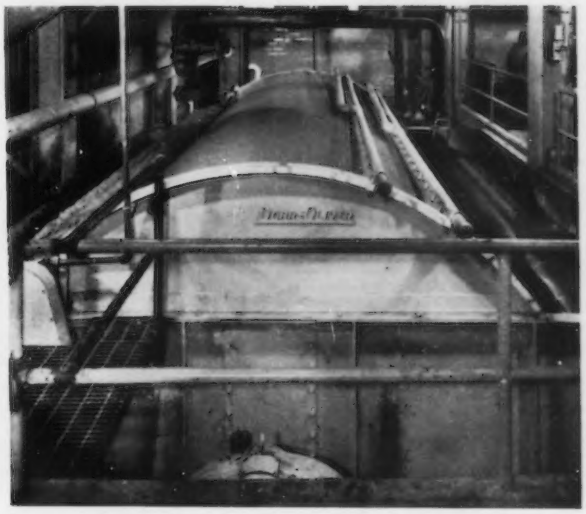
Maximum savings all along the line dominated the thinking of Marathon Southern Corporation when it planned its multi-million-dollar pulp, paper and converting facility, now in operation at Naheola, Alabama.

The basic operating economies inherent in the choice of site—abundant raw materials, a good labor supply, convenient transportation and proximity to potential markets—are enhanced by modern plant design and equipment. Contributing to high production, maximum utilization of materials and savings in operating costs are the examples of advanced Dorr-Oliver engineering shown on these pages. The success of Dorr-Oliver equipment is based on more than 35 years of experience in serving the pulp and paper industry.

For more information on this and other equipment, write to Dorr-Oliver Incorporated, Stamford, Connecticut. Better still, let us send a Dorr-Oliver engineer to discuss your specific problems.



OLIVER LIME MUD FILTER provides a high capacity, low maintenance unit for maximum recovery of mud for reburning. Evidence of the large scale of Naheola operations is the fact that a total of 100 tons of lime are recovered daily.

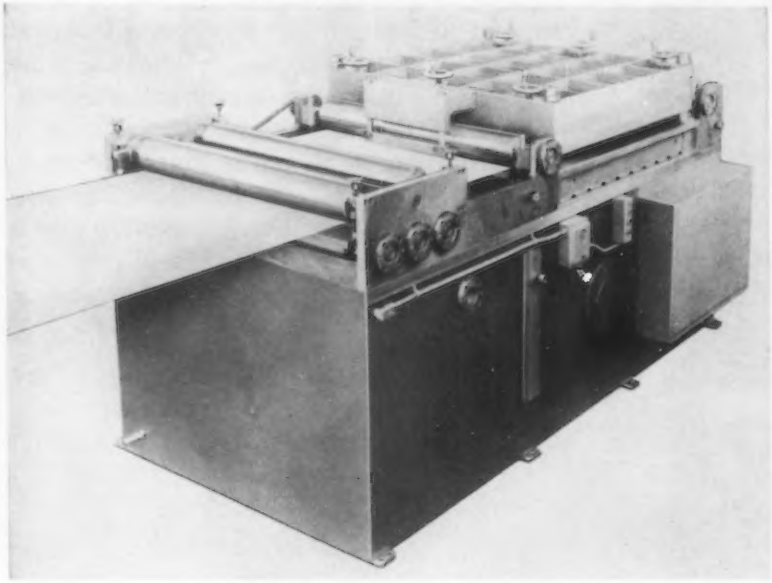


OLIVER 11'6" x 20' VALVELESS DECKER installed in screen room thickens stock after washing and screening. Valveless design operates efficiently on free pulps and results in reduced liquor and pulp pumping costs.

DORR-OLIVER

WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT

# NEW EQUIPMENT & SUPPLIES



## Web Press for Blanking, Scoring Boxes

Karr Engineering Service, Inc., 2920 W. Clybourn Street, Milwaukee, Wis., has announced an automatic, multi-purpose, high speed die-cutting web fed press for blanking, punching and scoring.

Known as the Model P-50, the unit handles a 50-inch web width of stock in the production of folding boxes, corrugated boxes, food trays, cereal boxes, milk cartons and many other items in stock thicknesses from .0005 inches to any thickness that is available in web or roll form.

The P-50 has speeds up to 200 platen strokes per minute and at its maximum, with automatic sheeter, is said to be capable of producing 12,000 sheets—50 inches by 50 inches per hour. Waste is held to a minimum. Low cost steel rule dies are used.

Positive safety controls are a prime feature. Skilled help is not required to operate the machine—only one man is necessary.

The Karr P-50 can be furnished with printers for printing both sides at one time or one side in one or more colors. Embossing equipment, stitchers and gluers are also available.

All the accessories are completely synchronized with the press. Karr Engineering also produces press in 12 inch and 24 inch web width sizes.

## Centrifugal Pump Line Broadened

Worthington Corp. has announced that it has broadened its line of standard pumps with the introduction of an 8-inch and two 3/8-inch Worthite Centrifugal pumps.

In the 3/8-inch pump, the liquid end is constructed of all Worthite, an exclusive corrosion resistant metal, and is available with either a standard packed box or internal mechanical seal. It is offered in both frame mounted and monobloc design.

The Worthite 8-inch pump known in the Worthington line as the 8CNG-104 is a twin volute pump which supplements the present CNG coverage. Of different design than the standard line, the liquid end of the 8CNG-104 consists of three parts: suction cover, volute and stuffing box head. The stuffing box head is designed so that a water jacket is an integral part, which will serve to either heat or cool the stuffing box area.

Because of a double support—bearing frame support and separate liquid end support—the pump can be disassembled from the rear without disturbing the volute, suction head and piping. When a packed box pump is desired, a hooked type Worthite shaft sleeve may be installed over the solid Worthite shaft. A split flushing gland will be standard with packing. For further specifications, contact the Worthington Corp., Harrison, N. J.

## Quick Calibration Of Load Cells

A device which allows the scale operator to verify quickly and easily the indicating accuracy of an electronic load cell scale without the use of test weights is announced by Toledo Scale, Div. of Toledo Scale Corp., Toledo 12, Ohio.

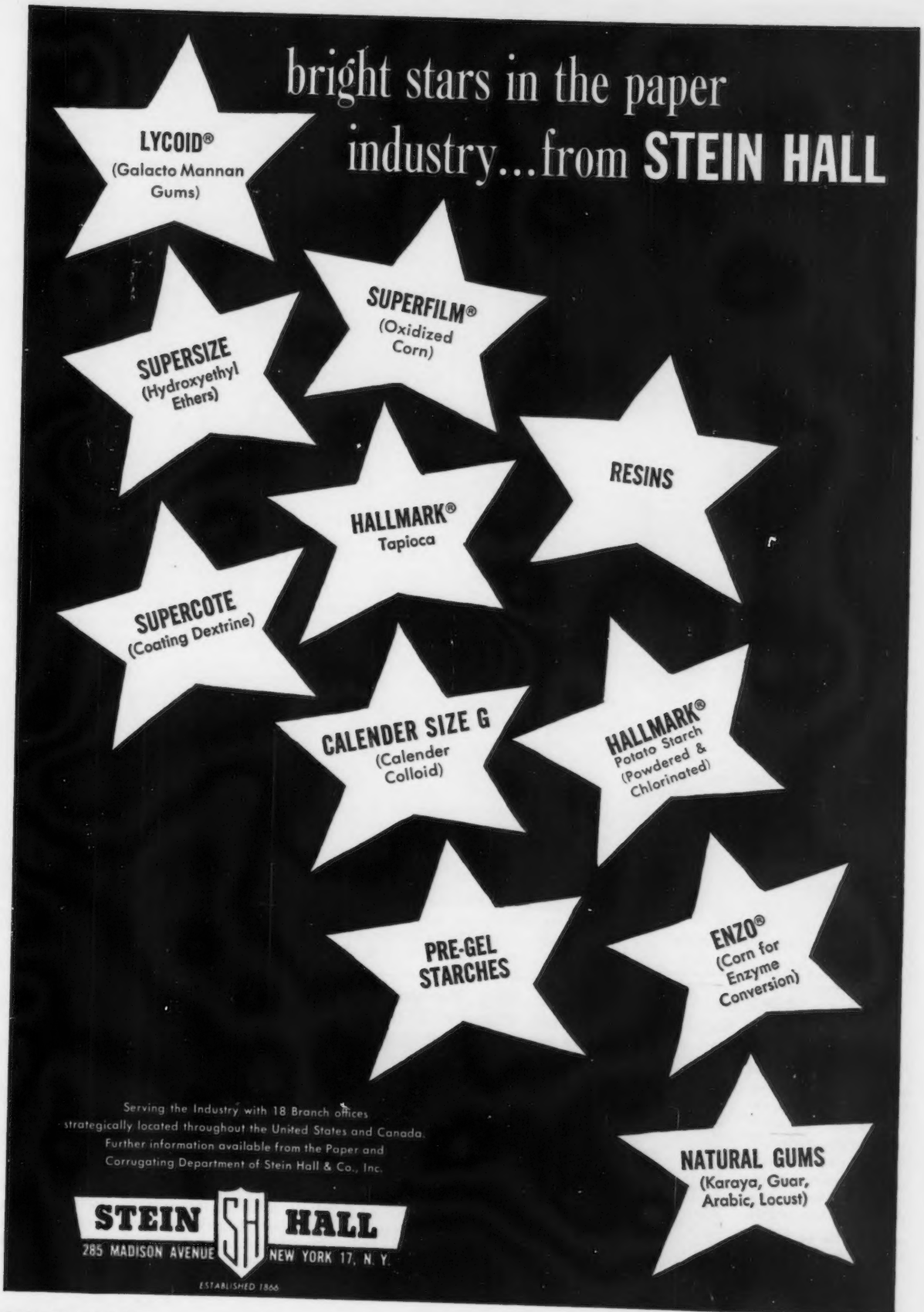
The calibrating device is incorporated into the Toledo Electronic Load Cell scales during manufacture. At initial installation tests, it is set and locked at a voltage equal to full dial capacity. Thereafter, according to the company, to determine if the scale is indicating accurately, it is only necessary for the operator to turn a test switch on the scale to the "calibrate" position. If the scale is correctly calibrated, it will indicate full dial.

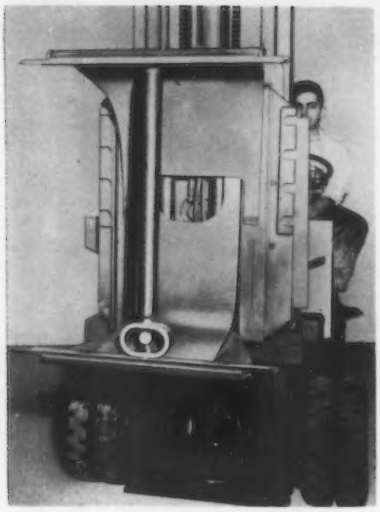
Additional benefits claimed for this calibration device include: first, it is possible to recalibrate a scale without test weights even after new parts, such as load cells, potentiometers, etc., have been installed; second, even scales having range steps (unit weights) are equipped with this device.

## Cut Paper Roll Damage With Lab. Load Standard

During stacking operations with twin-clamp rotating-jaw industrial trucks, warehousemen at the Chicago Tribune have prevented damage to rolls of paper through use of a proving ring. This instrument, designed and manufactured by the Steel City Testing Machines, Inc., 8817 Lyndon Ave., Detroit, Mich., is usually used as a transfer standard for load measurement in the calibration of testing machines.

With this device, clamp-pad force


bright stars in the paper
industry...from STEIN HALL
LYCOID®
(Galacto Mannan
Gums)
SUPERFILM®
(Oxidized
Corn)
SUPERSIZE
(Hydroxyethyl
Ethers)
RESINS
HALLMARK®
Tapioca
SUPERCOTE
(Coating Dextrine)
CALENDER SIZE G
(Calender
Colloid)
HALLMARK®
Potato Starch
(Powdered &
Chlorinated)
PRE-GEL
STARCHES
ENZO®
(Corn for
Enzyme
Conversion)
NATURAL GUMS
(Karaya, Guar,
Arabic, Locust)
Serving the Industry with 18 Branch offices
strategically located throughout the United States and Canada.
Further information available from the Paper and
Corrugating Department of Stein Hall & Co., Inc.
STEIN SH HALL
285 MADISON AVENUE NEW YORK 17, N. Y.
ESTABLISHED 1866



is measured directly by placing the dial-indicator type proving ring, with its attached spacer, between the pads. Hydraulic pressure is then built up. The reading of the dial indicator tells whether the pressure limiting valve is correctly set to prevent the roll of paper being crushed or to prevent it from slipping out of the clamps.

If deflection of more or less than the correct amount is shown on the dial, the pressure limiting valve is reset and rechecked. The proving ring can also act as a leak detector for the clamp's hydraulic pressure lines. Pressure is applied to the clamp mechanism, with the proving ring mounted between the pads, and then held. If there is a leak in the circuit, the dial indicator quickly shows the reduced load on the ring.


**CHAS. T. MAIN, INC.**

*ENGINEERS*

PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION

**PULP AND PAPER MILLS**

STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING REPORTS, CONSULTATION, VALUATIONS

●

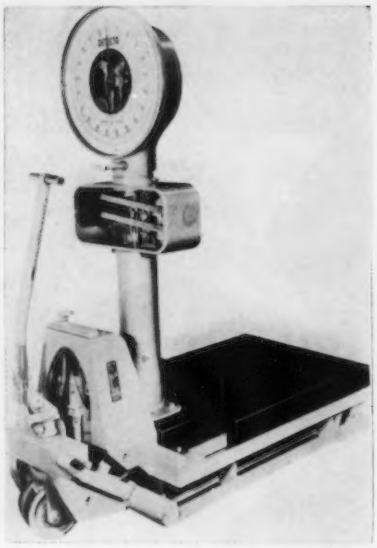
BOSTON, MASSACHUSETTS

CHARLOTTE, NORTH CAROLINA


## Dispersant Maintains Even and Level Coating

Cavco Evenol R is specifically formulated for use as a dye and pigment dispersing agent in coating mixes. This product is also claimed to have high surface active properties which promote even and level coloring, thus preventing resist spots ("fish eyes"). The chemical has been formulated so as not to generate foam and actually acts as an antifoam. Because of its wetting properties, Evenol R tends to reduce the viscosity of coating mixes containing high solids. This is said to promote smooth, even flow of the coating.

Evenol R is a reddish-brown liquid soluble in water at any proportion. It contains 42 per cent active matter. Specific gravity is 0.970, and weight per gallon is 8.36 lbs. The pH of a one per cent solution ranges between 9.5 and 10. The liquid dispersant can be added directly to the coating mix without predilution. It is recommended that two per cent be used, based on the weight of the solids in the coating formulation. This concentration can be varied to meet specific mill conditions. When used in the recommended concentrations, Evenol R, it is said, will not alter the shade of the pigment or dye. Further information and technical assistance can be obtained upon request from the Jos. Cavedon Chemical Co., Inc., Woonsocket, R. I.



**A PORTABLE SCALE TRUCK that incorporates a scale as an integral part of a hydraulic footlift truck enabling commodities to be moved and weighed simultaneously has been developed by Lewis-Shepard Products, Inc. The hydraulic footlift hand truck is built with special lifting angles to hold the scale. Each truck must be adapted to suit the design and capacity of the scale to be used. For further information write in care of Department R10-3, 125 Walnut Street, Watertown 72, Mass.**

## Minimum of Moving Parts In Indicating Transmitter

A line of pneumatic indicating transmitters for pressure, flow, temperature, liquid level, differential pressure, and dew point has just been introduced by The Foxboro Co., Foxboro, Mass.

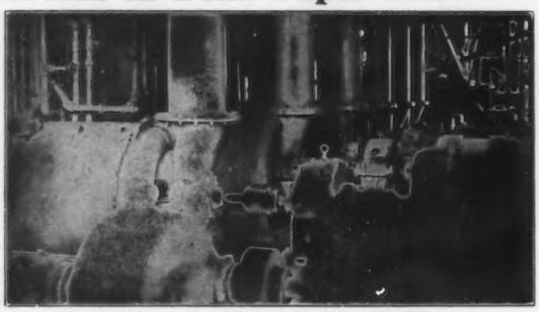
Known as the Model 45 Series, the transmitter is available with measuring elements in the following ranges: Pressure, 0-10 inches water to 0-80,000 p.s.i.; Temperature, 450°F. to +1000°F.; Flow (differential pressure, 0-1 to 0-400 inches water; Liquid level, open vessels 0-10 inches water minimum; closed vessels 0-20 inches water minimum; Dew Point, 50°F. to +165°F.; output signal, 3-15 p.s.i. (3-27 p.s.i. optional). It operates on a 20 p.s.i. air supply.

The Model 45 is said to have high ambient temperature stability, with less than ½ per cent error for ambient temperature changes as great as 50°F., regardless of the variable measured. Overall calibrated accur-


**Three APMEWS Replaced a Big Room Full of Flat Screens in Bond Paper Mill**

**"Apmew centrifugal pulp cleaners & screens have now been installed and are working very satisfactorily." Centrifugally cleaner, more salable paper is being produced for big profits.**

Occupy 10 feet by 30 feet—SAVE 81 feet by 96 feet



**APMEW, Inc., P. O. Box 1, Glens Falls, N. Y.**

# White carton makes a beautiful picture

The natural color and texture of luscious fruit contrast strikingly with the bright white background of corrugated kraft. So do product, company identification, and brand name when carried as part of this "new look."

That's why the shipping carton is becoming more than just a container to carry the goods to market. In sparkling white, it attracts attention in shipment—and at the end of the line where sales are made.

It takes proper increase of TITANOX® white titanium dioxide pigment in coatings and liners to obliterate drabness and truly present the new look that affords sharp contrast for merchandising messages.

To help you gain the full benefits of white pigmentation is our most important job. This applies to *all* types of paper which depend on titanium dioxide white pigments for just the right combinations of whiteness, brightness, and opacity. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments Ltd., Montreal.

TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY

TITANOX

1207-C

acy of the transmitter, is guaranteed to be within ±½ per cent.

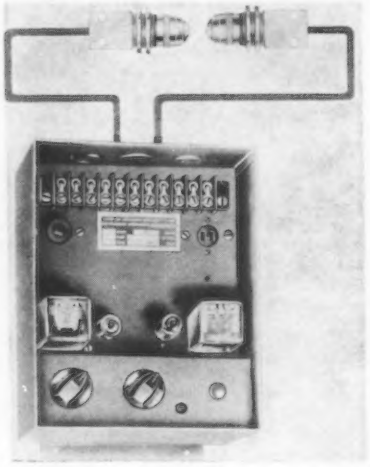
Featuring link and lever calibration, the Model 45 has a large 6⅛-inch scale and fluorescent pointer.

All instrument components are enclosed in a weatherproof steel case, vinyl coated and gasketed door. Overall case dimensions: 9¼ by 11⅜ by 5 inches. A universal bracket is supplied for surface or 2-inch pipe mounting.

## Photo Cells Feature Transistorized Amplifiers

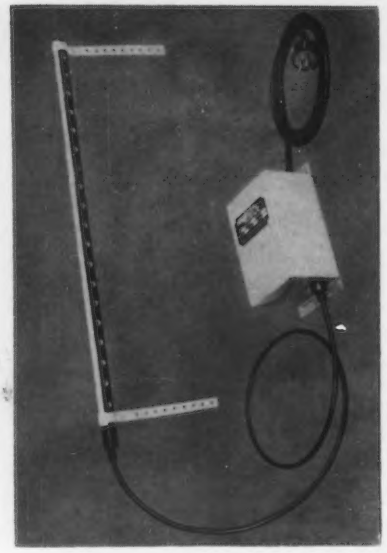
Standard Instrument Corp.'s photoelectric controls are designed for automatic production counting, sorting, inspecting, traffic control, machine and operator safeguard, liquid level and bin level control, cut-off control, loop regulation and precision filling. Operation is by beam interruption or by reflection.

The three elements of the Robot-Eye photoelectric system-light source, photo cell and amplifier—may be interconnected by plug-in terminals and receptacles. Miniaturization and easy mounting are prime features of the light sources and photo cells. Units are provided with clearance holes for flush mount, threaded



bushing for panel mount, or swivel base and ball joint for ease of alignment.

Amplifiers are available in tube or transistorized form. Amplifier flexibility is extended by provision for plug-in connection of time delays and count registers. Operating range of standard units is up to 20 feet. This range may be extended to 100 feet, if necessary. Operating speeds are as high as 1000 per minute. All components are claimed to function at a fraction of their rated capacity. A catalog is available from the Standard Instrument Corp., 657 Broadway, New York 12, N. Y.



THE "STATOMATIC" STATIC ELIMINATOR is so designed that contact with the inductor bar will be shockless. Neither will harmful rays or gases be produced, report the manufacturers. The unit may be used on paper machines, calenders, slitters, cutters, presses, folders, and other machines susceptible to static electricity interference. Literature is available from the Portland Co., 58 Fore St., Portland, Me.

## Level Indicators For Granular Materials

Fuller Material-Level Indicators are now available in two models: SG-4X for use on hazardous dust locations (Class II, Groups E, F and G), and SG-4 for all general purpose applications. The models are identical in operation and dimensions. They contain interchangeable parts and wiring, except that Model SG-4 contains a gasket between the cover and the body, while Model SG-4X has metal to metal surfaces and a paddle shaft bushing machined to UL specifications.

**PAPER TRADE JOURNAL is always mailed on Friday at East Stroudsburg, Pa. If you feel that there is undue delay in receiving your copies, we suggest that you write to your local postmaster with a copy to S. E. Marsh, assistant postmaster at East Stroudsburg. If you will also send a copy of your complaint to us this will keep us posted on areas of poor service.**

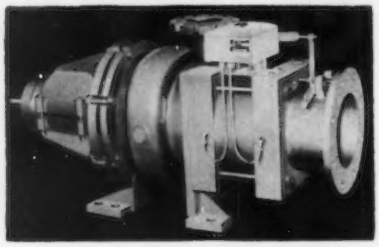
These indicators may be used to indicate the high or low level of pulverized, fine, crushed or granular materials (maximum 1 inch) in bins and silos. They are used also to control such equipment as feeders, valves, elevators and conveyors.

In operation a sensing paddle, located at the desired material level, is rotated by a shaded-pole induction motor located in the casing outside the bin or silo. When the material restrains the paddle from turning, the motor and its mounting revolve around the drive shaft, actuating two switches mounted in the base of the indicator.

When the material falls away from the paddle, an adjustable tension spring returns the motor and its frame to the initial position, releasing the switches and causing the motor to turn the paddle again.

## Pneumatic Control System Improved for ACAP Pumps

An improved pneumatic control system has been announced by Allis-Chalmers for its adjustable-capacity, adjustable-pressure (ACAP) pumps, available in sizes up to 10-inch dis-



charge. The system automatically adjusts the cylinder of the single-stage, single-suction pumps in seconds by air pressure.

The improved design eliminates all gearing by building into the ACAP body the operating air cylinder. The entire ACAP assembly then becomes a tubular shaft air cylinder, the flow to the pump impeller passing through this moveable hollow shaft. Increasing the air feed to one side of the piston moves the cylinder in or out to regulate recirculation and flow at the discharge nozzle.

Lubrication is by means of an oil mist lubricator located in the incoming air line. Double seals safeguard stock against possible contamination by air and keep liquid from entering the air chamber. The seal chamber is vented to the atmosphere and can be used to indicate the condition of the seals. The simplified air control requires no gears or control motor. It speeds variations which meet head and capacity requirements.

# the world's standard for mechanical pulp — *for over...*

FOR 33 YEARS, ever since we built the first successful pulpstone in 1926, Norton Company has been manufacturing and shipping pulpstones to paper mills in all parts of the world. Each has been carefully engineered to meet the special requirements of each individual mill.

FOR 33 YEARS, Norton research men and technicians have been constantly at work, applying a wide variety of highly specialized knowledge to the development of better pulpstones for better mechanical pulp.

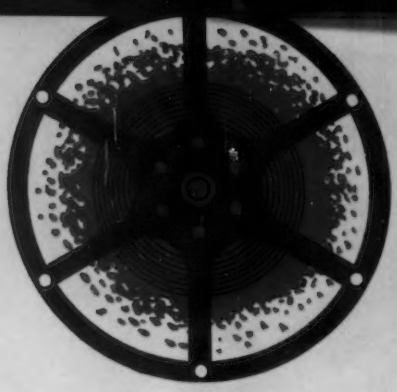
TODAY, a world-wide service organization of Norton pulpstone engineers, backed by 33 years of pulpstone experience, stands ready to study your mill and to recommend just the right Norton pulpstone for your type of wood, your type of grinder and the type of pulp you want to produce.

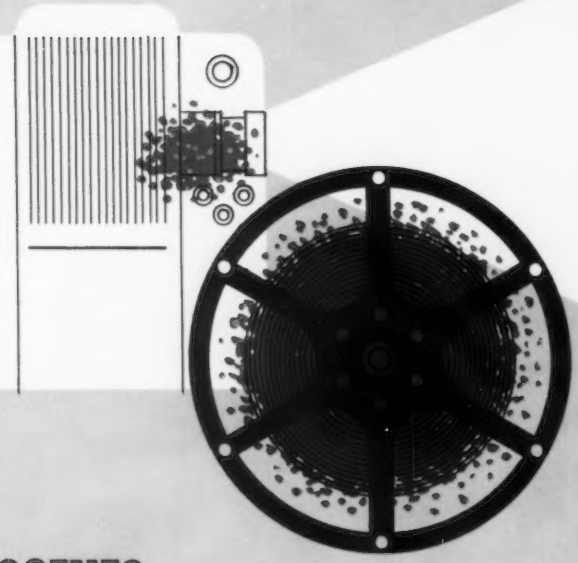
**NORTON COMPANY, WORCESTER 6, MASS.**
**Norton Company of Canada Ltd., Hamilton, Ont.**
**EXPORT: Norton International Inc., Worcester 6, Mass.**

**NORTON PULPSTONES**

Abrasives–Grinding Wheels
Refractories–Electro-Chemicals
Machine Tools–Non-slip Floors

*75 years of* . . . Making better products . . . to make your products better





# SCENES FROM ALICEVILLE

1. Portion of general administrative offices at Huyck Felt Company's Aliceville, Alabama plant.

2. Batteries of modern feltmaking looms capable of weaving the widest felts in use today.

3. Skilled operators joining woven fabric into endless belts.

4. Burling room showing spacious, well-lighted work areas where felts are painstakingly checked before finishing.

5. Several of the large instrument-controlled rotary fulling mills used to give felts proper size and body.

6. Five of the automatically operated stainless steel washers employed to insure cleanliness and apply chemical treatments.

7. View of the drying room where felts are dried under tension to insure proper size for installation and start-up.

# PAPER'S MAGIC CARPET

The world's largest modern mill producing papermakers' felts — Aliceville, Alabama.

From Aliceville, Alabama, home of the world's largest, modern felt plant comes "Paper's Magic Carpet" — the Huyck-produced sound color motion picture on feltmaking every papermaker will want to see.

Via "Paper's Magic Carpet" you will tour incomparable feltmaking facilities and learn how new techniques and progressively-engineered equipment are combined by skilled craftsmen to produce the finest in felts. You will see in this educational film not only the entire feltmaking process, but many of the latest advancements in papermaking.

"Paper's Magic Carpet" is available for showing at your mill by your Huyck Sales and Field Service Engineers. Make your arrangements with them now.

HUYCK FELTS

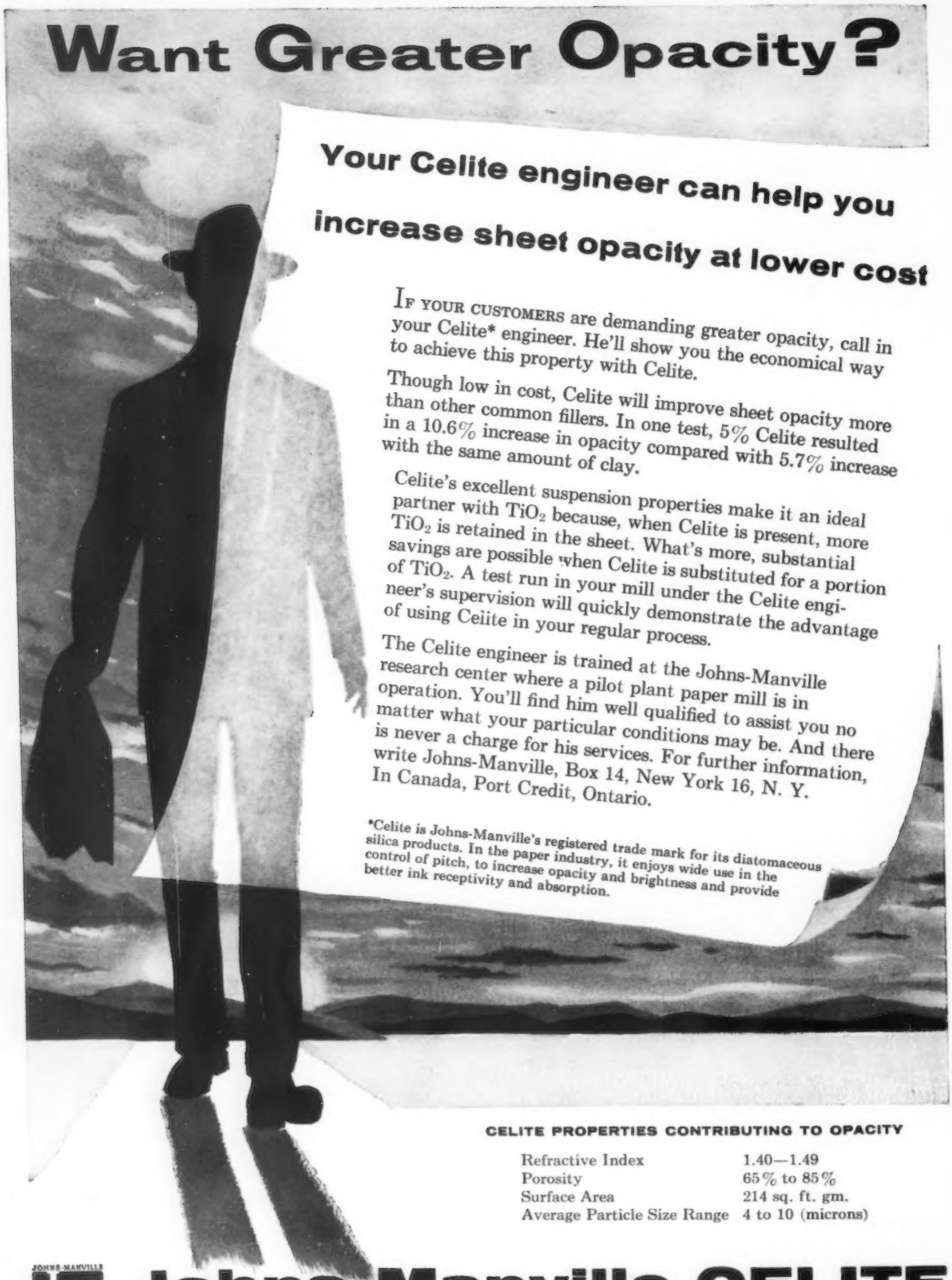
Huyck Felt Co.,
Rensselaer, N. Y.;
Aliceville, Ala.;
Division of F. C. Huyck & Sons
In Canada: Kenwood Mills Ltd.,
Arnprior, Ontario.

NEW

## HUYCK FELTS ★ INDUSTRIAL FABRICS

FIRST IN QUALITY • FIRST IN SERVICE SINCE 1870

# Want Greater Opacity?



## Your Celite engineer can help you increase sheet opacity at lower cost

IF YOUR CUSTOMERS are demanding greater opacity, call in your Celite* engineer. He'll show you the economical way to achieve this property with Celite.

Though low in cost, Celite will improve sheet opacity more than other common fillers. In one test, 5% Celite resulted in a 10.6% increase in opacity compared with 5.7% increase with the same amount of clay.

Celite's excellent suspension properties make it an ideal partner with $TiO_2$ because, when Celite is present, more $TiO_2$ is retained in the sheet. What's more, substantial savings are possible when Celite is substituted for a portion of $TiO_2$. A test run in your mill under the Celite engineer's supervision will quickly demonstrate the advantage of using Celite in your regular process.

The Celite engineer is trained at the Johns-Manville research center where a pilot plant paper mill is in operation. You'll find him well qualified to assist you no matter what your particular conditions may be. And there is never a charge for his services. For further information, write Johns-Manville, Box 14, New York 16, N. Y. In Canada, Port Credit, Ontario.

*Celite is Johns-Manville's registered trade mark for its diatomaceous silica products. In the paper industry, it enjoys wide use in the control of pitch, to increase opacity and brightness and provide better ink receptivity and absorption.

**CELITE PROPERTIES CONTRIBUTING TO OPACITY**

| | |
|---|---|
| Refractive Index | 1.40—1.49 |
| Porosity | 65% to 85% |
| Surface Area | 214 sq. ft. gm. |
| Average Particle Size Range | 4 to 10 (microns) |

JOHNS-MANVILLE JM PRODUCTS

# Johns-Manville CELITE

**PRODUCTS FOR THE PAPER INDUSTRY**

## OBITUARIES

**Holger Nilsson,** 57, vice president, KMW (Karlstad's Mekaniska Werkstad), Karlstad, Sweden, died January 30 after a long illness.

Mr. Nilsson joined KMW in 1923 as a young engineer. From the early 1930's until 1948 he served KMW alternately in South America and at Karlstad. Returning to Karlstad from Rio de Janeiro in 1948, Mr. Nilsson was appointed vice president in 1949.

**Willard P. Hawley, Jr.,** 69, longtime resident of Portland, Ore., died unexpectedly February 1 at his home.

In 1908, Mr. Hawley entered business with his father, who at that time was building the Hawley Pulp & Paper Mill in Oregon City. In 1926 he became vice president and general manager of the St. Helen's Pulp & Paper Co. He was also president of the California Bag & Paper Co.

**Mrs. Carol Case Dennison,** chairman of the board of Case Brothers, Inc., Manchester, Conn., paper manufacturers, died suddenly at her home in Manchester on January 27.

Mrs. Dennison was active in the management of Case Brothers for over 50 years and was president of the company prior to her assumption of the chairmanship in 1952.

**Edward Voightman,** 53, of Neenah, Wisc., manager of the Kimberly-Clark Corp. products laboratory, died January 21.

**Foy Houston,** 44, safety director for International Paper Co. mills in Bastrop, died unexpectedly January 14 in a Bastrop hospital.

Mr. Houston, who was with International Paper in Bastrop since 1940, was well known in the Bastrop area.

**Charles G. Wood,** 63, former president and one of the founders of the Simplex Paper Corp., Adrian, Mich., died at Bixby hospital.

Mr. Wood had been ill with cancer for more than a year. The illness forced his retirement as a Simplex executive, a position he held since coming to Adrian in 1929 when he joined two brothers, Frederick and Arthur Wood, in organizing the firm.

**Joseph E. Fleury,** 69, paper technology specialist for Armour Research Foundation of Illinois Institute of Technology, died February 6, in Rangoon, Burma. Professor Fleury was one of four ARF specialists on the staff of the Union of Burma Applied Research Institute in Rangoon. He had been in southeast Asia since 1958.

A native of Three Rivers, Quebec, Professor Fleury had been with the Paper Making Institute, a provincial government school, in Canada since its founding and was on a two-year leave of absence for the Burma assignment.

**Walter T. Clark,** 70, a specialist in the use of waste materials, died February 10 in New Rochelle Hospital after a short illness.

Mr. Clark was president of Clark, Ebner & Finkel, Inc., in New York. He had formerly been president of the firm of Darmstadt, Scott & Courtney, also in the waste materials trade.

# Figures of the Week

**PAPER PRODUCTION RATIO REPORT**—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

| | | | | | |
|---|---|---|---|---|---|
| | Jan. 9 | Jan. 16 | Jan. 23 | Jan. 30 | Feb. 6 |
| 1960 | 95.8r | 97.4r | 96.3r | 95.7r | 96.2 |
| | Jan. 10 | Jan. 17 | Jan. 24 | Jan. 31 | Feb. 7 |
| 1959 | 91.0 | 90.8 | 90.5 | 89.2 | 90.1 |

r Revised

COMPARATIVE MONTHLY SUMMARIES

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 | 96.3‡ | — | — | — | — | — | — | — | — | — | — | — | — |
| 1959 | 87.8 | 90.5 | 93.2 | 94.4 | 95.3 | 95.6 | 87.0 | 96.0 | 92.4 | 97.4 | 95.3 | 86.6 | 94.0 |

‡ Preliminary

COMPARATIVE YEARLY SUMMARIES

| | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 |
|---|---|---|---|---|---|---|---|---|
| Year to Date | 95.2 | 94.0 | 94.1 | 99.4 | 94.6 | 86.9 | 88.2 | 96.3 |
| Year Average | 92.3 | 91.6 | 96.2 | 97.9 | 90.4 | 87.0 | 94.0 | — |

*All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.*

**PAPERBOARD OPERATING RATIOS†**—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

| | | | | | |
|---|---|---|---|---|---|
| | Jan. 1-10 | Jan. 16 | Jan. 23 | Jan. 30 | Feb. 6 |
| 1960 | 80 | 97 | 95 | 97 | 96 |
| | Jan. 1-10 | Jan. 17 | Jan. 24 | Jan. 31 | Feb. 7 |
| 1959 | 78 | 93 | 91 | 92 | 93 |

COMPARATIVE MONTHLY SUMMARIES

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1959 | 89 | 94 | 95 | 94 | 96 | 96 | 83 | 97 | 92 | 97 | 94 | 80 | 92 |

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

**SUMMARY OF PAPERBOARD STATISTICS**—National Paperboard Assn. Figures

| ITEM | THIS WEEK ENDING Feb. 6, 1960 | LAST WEEK ENDING Jan. 30, 1960 | CUMULATIVE TO DATE Jan. 1 to Feb. 6, 1960, incl. |
|---|---|---|---|
| % Activity | 96% | 97% | 93% |
| Total | 320,887 | 325,870 | 1,554,856 |
| Liner | 107,075 | 112,984 | 539,400 |
| Corrugating Material | 51,495 | 49,989 | 242,377 |
| Chip & Filler Board | 5,716 | 5,182 | 24,520 |
| Total Containerboard | 164,286 | 168,155 | 806,297 |
| Folding | 57,260 | 60,026 | 285,192 |
| Set-Up | 11,916 | 11,966 | 60,258 |
| Special Food Board | 27,738 | 30,020 | 138,228 |
| Other | 59,687 | 55,703 | 264,881 |
| Total Boxboard | 156,601 | 157,715 | 748,559 |
| **Total Orders** | | | |
| Received | 352,417 | 326,476 | |
| Unfilled End of Week | 489,216 | 462,228 | |

*One in a series of interviews with the men who are "Virginia"*

# "New information about reducing agents keeps setting off new waves of project studies. The results... frequently a better product at lowered cost."

Dr. Mearl A. Kise, director of research and development, Virginia Smelting Company

An important part of "Virginia" policy is to assist paper manufacturers in the efficient application of their reducing agents in order to provide an improved process or significantly reduced production costs, or both. The newly developed uses in turn lead other manufacturers to reinspect their processes and discover the advantages of using "Virginia" chemicals and accompanying technical service.

Dr. Kise, who heads up "Virginia" research and development, discusses this aspect of his company's products and services.

**Q How many reducing agents does "Virginia" produce?**

**A** Five—liquid sulfur dioxide, sodium bisulfite anhydrous, zinc and sodium hydrosulfites, and hydroxylamine sulfate.

**Q Are their properties well known to chemical engineers?**

**A** Those of the first four—very much so. These chemicals have been available for a long time and much is known about them. But because each application poses certain new problems, only people who have been working with them a long time have had the experience to know just what to expect. The fifth chemical, hydroxylamine sulfate, is relatively new. Research and development are beginning to uncover what apparently are great potentialities for it.

**Q Has "Virginia" helped develop applications for these reducing agents?**

**A** Definitely. Our research and development laboratories are constantly at work looking for new applications.

**Q Does your company work with manufacturers in developing new ones?**

*"... by substituting zinc hydro for peroxide, they can cut operating costs ..."*

**A** Yes, regularly. For example, we worked in the field and in our own laboratories for several years developing uses of zinc and sodium hydro in bleaching paper pulp. The same is true of our $SO_2$ in pulp processing. "Virginia," incidentally, was one of the earliest suppliers of liquid $SO_2$ for this purpose. We spend a great deal of time with manufacturers on all phases of these operations. I could mention many such examples.

**Q Do applications like these benefit other manufacturers as well?**

**A** Yes. These reducing agent applications are rarely patented. So gradually other manufacturers begin to investigate, trying the new application out themselves. And when they discover, as they did in the paper industry by substituting zinc hydro for peroxide, that they can cut operating costs appreciably, the new operation becomes a part of their process. Until the new operation is all ironed out, our men may actually be working right in the manufacturer's plant with his engineers and chemists, helping to solve any problems that may crop up.

**Q Why does the use of "Virginia" reducing agents frequently lower a manufacturer's production costs?**

**A** For several reasons. Our products are of a very high purity in every case, but they *are* basic chemicals. So they are often not as expensive as the chemicals they replace. That's one reason. And when the manufacturer draws on the background of experience "Virginia" offers him, he is getting the benefit of every bit of technical know-how and every economical shortcut known about a given application.

**Q Is "Virginia" interested in working with manufacturers on new applications, even though they are not yet customers?**

*"... we try to help any manufacturer who asks us."*

**A** We are. Naturally, we are more keenly interested in some fields than others—especially where the opportunity exists to open up a large new market for one of our products. But it is impossible to be sure where such opportunities will arise, so as a matter of policy we try to help any manufacturer who asks us.

• • •

**DATA AND ASSISTANCE**

If you have a problem involving a reducing agent—write us on your letterhead, giving as many details as possible. We will supply you with pertinent technical literature. Or, if you prefer, we will send a "Virginia" man around to see you. No obligation, naturally.

**Industrial Division**
**VIRGINIA SMELTING COMPANY**
Dept. 257, West Norfolk, Va.

VIRGINIA® Chemicals

Field Offices: New York • Boston • Chicago • Atlanta
Asheville • Philadelphia • Akron • Seattle • Memphis
*Available in Canada and many other countries*

THE WHEELER ROLL CO.

**EXPERIMENTAL**

**PAPER and COATING MACHINES**

10 inches to 30 inches wide.

Variable Speeds

**WHEELER ROLL CO.**

**Kalamazoo**

**LODDING**
*Engineering Corporation*
AUBURN, MASSACHUSETTS

- DOCTORS—BLADES
- HYDRAULIC OSCILLATION
- Jet Air FUZZ REMOVERS
- No Spit STEAM SHOWERS
- Self Cleaning SHOWERS
- FRESH WATER SHOWERS

*Represented by*

W. E. Greene Corporation, Woolworth Bldg., New York

C. S. Connington, Barre, Mass.

Buffalo Rubber & Supply Inc., 526 Niagara St., Buffalo 1, N. Y.

E. C. Jacobi—H. D. Wake—P. R. Bruce, 746 So. Quincy St., Green Bay, Wisc.

R. T. Barnes. Jr., 1523 Chapin Ave., Burlingame, Calif.

Pulp & Paper Mill Accessories Ltd. Box 903 Montreal, Quebec

E & M Lamort Fils, Vitry-le-Francois (Marne) France

Joseph Winterburn Ltd., Bury, Lancs., England

# Prices of Fibers

## MARKET WOOD PULP

FIRST QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

| | U.S. | Canadian | Swedish | Finnish | Norwegian |
|---|---|---|---|---|---|
| Groundwood | $ 82.50/ 90.00 | $82.50/ 90.00 | §$90.00/ — | §$80.00/ — | §$90.00/ — |
| Bleached Gw'd | $ 97.50/100.00 | $97.50/100.00 | | | |
| Kraft, Blchd. | 157.00/ — | 160.00/162.50 | $157.00/162.50* | | $157.50/ — |
| Kraft, Blchd. Hdwd. | 152.00/ — | | $137.00/ — | | |
| Kraft, Semi-bleached. | 140.00/ — | 140.00/ — | | | |
| Kraft, Unbl. | 117.50/125.00 | 125.00/130.00 | †125.00/130.00 | 125.00/ — | |
| Sulphite, Blchd. | ‡150.00/155.00 | ‡150.00/155.00 | *155.00/ — | *155.00/ — | 155.00/ — |
| Sulphite, Bl. Hdwd. | 150.00/ — | | | | |
| Sulphite, Unblchd. | 135.00/ — | 135.00/ — | †135.00/ — | *135.00/ — | |
| Sulphite, Unb'l, Gl'sn | | 140.00/ — | †134.00/ — | | |
| Soda, Blchd. | 147.00/150.00 | 150.00/ — | | | |

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.
‡ Depending on Brightness.

## COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED FEBRUARY 9

| | Atlanta | Memphis | Dallas | Los Angeles |
|---|---|---|---|---|
| Grade 1 | n.a. | n.a. | n.a. | n.a. |
| 2 | n.a. | n.a. | n.a. | n.a. |
| 3 | $7.50/7.00 | $8.50/7.50 | $7.50/7.00 | n.a. |
| 4 | 7.00/6.25 | 7.25/6.25 | 6.50/6.25 | n.a. |
| 5 | 6.25/5.75 | 6.00/5.50 | 6.00/5.50 | 8.50/7.00 |
| 6 | 5.75/4.75 | 5.25/5.00 | 5.25/5.00 | 6.50/4.50 |
| 7 | 4.75/4.25 | 4.50/4.00 | 4.75/4.00 | 4.25/4.00 |

## WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

| | New York | Boston | Chicago | Los Angeles |
|---|---|---|---|---|
| | Feb. 15 | Feb. 15 | Feb. | Feb. |
| No. 1 Mixed Paper | $ 7.00/ 9.00 | 9.00/ 11.00 | 8.00/ — | 12.00/ 13.00 |
| No. 1 News | 14.00/ 15.00 | 14.00/ 15.00 | 16.00/ — | 14.00/ — |
| Overissue News (Lg. size) | 13.00/ 15.00 | 13.00/ 15.00 | 21.00/ — | 19.00/ 20.00 |
| Mill Wrappers | 19.00/ 22.00 | 13.00/ 15.00 | 13.00/ — | 14.00/ 15.00 |
| Old Corrugated Containers | 22.00/ 23.00 | 21.50/ 22.00 | 20.00/ — | 23.00/ — |
| Super Resorted Kraft Paper | 35.00/ 40.00 | — / — | 30.00/ — | 55.00/ — |
| New Double Kr. Ld. Corr. Cuts | 32.50/ 35.00 | 35.00/ — | 32.50/ — | 35.00/ — |
| (Semi-chem. medium) | 45.00/ — | 45.00/ — | 42.50/ — | — / — |
| New 100% Kraft Corr. Cuts | 40.00/ 42.50 | — / — | 57.50/ — | — / — |
| New Br. Kraft, Env. Cuts | 70.00/ 75.00 | 70.00/ 75.00 | 52.50/ — | 55.00/ — |
| New Br. Kr. Bag Waste Prntd. | 55.00/ 60.00 | 55.00/ 60.00 | 52.50/ — | 55.00/ — |
| New Br. Kr. Bag Waste Unprintd. | 60.00/ 65.00 | 65.00/ 75.00 | 60.00/ — | 60.00/ — |
| No. 1 Groundwood Shvs. | 25.00/ 30.00 | 25.00/ 30.00 | 22.00/ — | 32.50/ 35.00 |
| White Newsblanks | 55.00/ 60.00 | 53.50/ 60.00 | 40.00/ — | 60.00/ — |
| No. 1 Soft White Shvs. | 60.00/ 65.00 | 60.00/ 65.00 | 60.00/ — | 70.00/ 75.00 |
| Super Soft White Shvs. | 65.00/ 75.00 | 75.00/ 85.00 | 70.00/ — | — / — |
| Hd. White Shvs. | 85.00/ 90.00 | 90.00/100.00 | 85.00/ — | 95.00/ — |
| Hd. White nv. Cuts | 100.00/105.00 | 105.00/110.00 | 90.00/ — | 113.00/ — |
| Col. Tab. Cards | 47.50/ 50.00 | 47.50/ 50.00 | 52.50/ — | 40.00/ 45.00 |
| Manila Tab. Cards | 67.50/ 70.00 | 67.50/ 70.00 | 75.00/ — | 70.00/ 75.00 |
| No. 1 Col. Ledger | 37.50/ 42.50 | 37.50/ 42.50 | 45.00/ — | 29.50/ 32.50 |
| White Ledger | 55.00/ 60.00 | 58.00/ 60.00 | 55.00/ — | 55.00/ — |
| Mixed Book & Mag.† | 22.00/ 25.00 | — / — | 15.00/ — | — / — |
| No. 1 Books‡ | 22.00/ 24.50 | 17.00/ 19.00 | 32.50/ — | 16.50/ 18.50 |

† Includes Time & Life; no coarse groundwood. § Not to exceed 10% of groundwood.

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**Method 1.** Pump solution of Oakite Composition No. 19 to perforated pipe installed inside roll. Catch overflow in trough, return to heated solution tank, recirculate. Rinse. Cleans rolls and suction box simultaneously.

**Method 2.** Revolve roll at slowest speed through trough containing heated solution of Oakite Composition No. 19, for about four hours. Pressure-rinse.

**Method 3.** Brush solution of Oakite Compound No. 32 over roll. Keep surface wet until holes are completely opened. Or, use the mechanized methods outlined above with Oakite Compound No. 32. Pressure-rinse. For hard-water areas.

Each of these methods is "best" for many mills. Operating conditions, run of paper, type of pulp and hardness of water determines which is best *for them*. Which is best for *you?* Ask your local Oakite man, or write for Bulletin B-1324. Oakite Products, Inc., 48A Rector Street, New York 6, N. Y.

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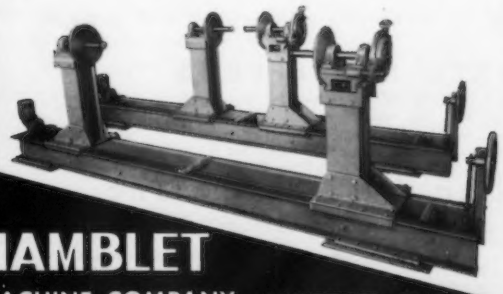

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### ELECTRICAL ENGINEER

South's largest newsprint manufacturer has permanent positions available for graduate Electrical and Mechanical Engineers to age 35. Duties are in Mill Engineering Department and include design, cost estimation, equipment selection and layouts, compiling reports, and general engineering work as required in the pulp and paper industry. Prefer applicants with 2 to 5 years pulp and paper mill experience. Starting salary based on qualifications with periodic merit increases. Complete insurance, retirement, and vacation programs established. All replies will be treated in confidence. Submit summary of experience to:

**Industrial Relations Department**

**BOWATERS SOUTHERN PAPER CORPORATION**

**Calhoun, Tennessee** TF

Sales Representative for New England area to sell Rubber Covered Rolls to Paper Industry, also general trade. Large well established company. Send complete resume to P. O. Box 60-16 care Paper Trade Journal. All replies Confidential. F-29

## Help Wanted

### Wanted
### TOUR BOSS

FOR BOXBOARD MILL LOCATED IN PENNSYLVANIA, SETUP AND FOLDING GRADES, STATE AGE, EXPERIENCE, AND REFERENCES. REPLIES TREATED CONFIDENTIALLY.

ADDRESS BOX 60-43 CARE PAPER TRADE JOURNAL. F-29

### WANTED

Man with technical training for paper development work in Pacific Coast paper mill. Preferably someone leaning toward production. Opportunity to advance to supervisory or management position. Specialty paper mill experience desirable. Address Box 60-37 care Paper Trade Journal. M-7

## Help Wanted

### EXCELLENT OPPORTUNITY FOR

Technically trained man for market development of specialty and technical papers. Sales experience preferred, but not necessary. Must have ability to carry out contacts at all organizational levels. Send resume to:

**Personnel Department**

**P. H. GLATFELTER CO.**

**Spring Grove, Pa.**

**Phone—Spring Grove 3216** A-4

### SUPERINTENDENT

Experienced in production of specialty papers, to take charge of department with a fourdrinier and impregnating-saturator. Southeastern state. Salary open. Write Box 60-25 care Paper Trade Journal. F-22

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A limited number of young men for

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**Help Wanted advertisements continued on page 60**

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1— 80" P & J 7 roll; heavy duty
1— 82" Lobdell 5 roll
1— 86" Lobdell 5 roll
1—115" B-C 7 roll
2—124" Downingtown 5 roll & 6 roll
1—128" Downingtown 7 roll

**CHIPPERS**

1— 88" Murray 10 knife w/600 hp motor
1— 96" Murray 6 knife; A-F Brng.

**COATERS**

1— 24" Waldron Coater & Embosser
2— 40" Chapman Extrusion Type
3— 65" & 76" Mayers

**COMPLETE MACHINES**

3—Sandy Hill 81" trim single cyl. Tissue
1—M & W 72" Fourdrinier paper machine

**CYLINDER MOLDS**

2— 63" face x 36" dia w/rubber couches
1—104" face x 36" dia
1—107" face x 48" dia; A-F Brng
2—111" face x 36" dia; A-F Brng
1—131" face x 42" dia.; A-F Brng
1—136" face x 54" dia; SS covering

**CYLINDER WET ENDS**

Downingtown single cylinder; 99" face x 48" dia.; 18" dia. couch

**DRYERS—HYDROSTATICALLY TESTED**

24" Dia.:
39—46" face; Chrome plated
1—156" face w/gear and steam joint

28" Dia.:
3— 70" face w/gears & bearings
3— 73" face w/gears & bearings
3— 76" face w/gears & bearings
3— 77" face w/gears & bearings
2— 84" face
2— 84" face w/accessories

36" Dia.:
1— 42" face
2— 44" face
2— 46" face
4— 70" face w/gears & bearings
11— 72" face w/gears & bearings
1— 74" face Lukenweld w/A-F Brng
1— 74" face w/gears & bearings
3— 75" face w/gears & bearings
9— 76" face w/gears & bearings
1— 77" face w/gears & bearings
1— 78" face w/gears & bearings
2— 80" face
5— 84" face
3— 88" face
18— 90" face; complete section
9—92" face; complete section
1—138" face
10—160" face

42" Dia.:
1—110" face
40—118" face; complete section
1—120" face
1—160" face

48" Dia.:
57— 46" face; chrome plated
13— 82" face; complete section
5— 84" face
24—110" face w/frames & bearings
10—123" face w/gears, frames & bearings
1—128" face

**DRIVES—ENCLOSED RIGHT ANGLE**

1—Michigan 92½ h.p. ratio 10.1 to 1
1—50 h.p. Reliance VS with MG set & controls; 850-1200 r.p.m.
1—Beloit 65 h.p. Ratio 2.88 to 1
1—Phila. 28 h.p. Ratio 10.56 to 1

**EMBOSSERS**

1— 80" Hudson Sharp; A-F Brng
2— 62" Textile Machinery Co; w/drives

**FILTERS—STEEL VATS**

1— 6' face x 3' dia Dorr-Oliver
1— 10' face x 8' dia Oliver chem. sludge filter

**FLAT SCREENS**

2— 12 Plate IMPCO w/Dunbar Drives
1— 4 plate Tailing Screen

**INLETS & HEADBOXES**

1—106" Valley w/8" distributing roll

**JORDANS**

2—Appleton #1 w/A-F Brng
1—N & W Pony w/75 h.p. motors
1—Horne w/AF Brngs

**MOTORS 3 PH 60 CYCLE**

1—100 hp GE; 440 v; 695 rpm
2—100 hp GE; 440 v; 430 rpm
1—350 hp GE; 2200 v; 720 rpm: Synch

**PAPER MACHINES DRIVES**

1—De Laval 100 h.p. steam turbine w/reducers

**PULPER**

1—Dilts 16 ft. complete w/125 h.p. motor, elec. hoist & oil pump

**PUMPS—OPEN IMPELLER**

1—Shartle 8 x 16 Triplex
23—Centrifugal Stock and Water Pumps

**REELS**

1— 36" Kohler Automatic 2 arm unwind reel
1—100" Kohler automatic two arm unwind reel; 60" dia rolls; new condition
1—123" Beloit—2 bowl
1—126" Beloit Aldrich surface drive type
1—150" B & S pope type w/Reliance drive

**REFINERS**

2—#1 Claflin; A-F Brng
1—24" Bauer Double Disc w/two 50 h.p. motors
1—24" Downingtown Weiner; new
1—Model 185E Bauer w/two 150 h.p. motors
2—Model 410-1 40" Bauer; w/two 400 h.p. motors each; used 6 mos.

**ROLL GRINDERS**

1—124" x 30" Farrel w/crowning device
1—208" x 32" Farrel w/crowning device

**ROLLS**

Distributor—Stainless Steel
2— 8" dia. x 115" face
1— 6½" dia. x 115" face

Couch—Rubber Covered
1—14" dia. x 158" face
2—15¼" dia. x 136" face
1—16" dia. x 96" face
2—16" dia. x 198" face
3—17½" dia. x 135" face
1—18¼" dia. x 84½" face
1—18" dia. x 108" face
2—16" dia. x 65" face

Press—Rubber or Brass Covered
71 Miscellaneous sizes. Drawings available

Felt—Steel, Brass, Rubber Covered
335 Miscellaneous sizes. Drawings available

Calender—Chilled Iron
72 Miscellaneous sizes. Drawings available

**ROTARY SCREENS**

5—Bird #3A, Model 100 w/SS or copper vats
1—Jones Leithwalk copper lined

**SHEETERS—DOUBLE KNIFE**

1—157" Masson-Scott; like new

**SHEETERS-SINGLE KNIFE**

1— 36" Beck w/layboys & backstand
6— 56", 60", 66", & 70" Hamblets w/backstands
1— 65" Kidder w/elec. eye and layboy
2— 82" Hamblets w/backstands & layboys
1—105" Hamblet
1—112" Hamblet Heavy duty, roller bearing, w/layboy, backstand, monorail, etc. New 1954

**SLITTERS AND REWINDERS**

18" Maximum Rewind Diameter
1— 72" Cameron Type 26-3 A Duplex

24" Maximum Rewind Diameter
1— 32" Cameron Type 6
3— 42" Cameron Type 6
1— 42" Cameron Type 6 Shear Cut
2— 48" Langston Duplex Shear Cut
2— 52" Cameron Type 6
1— 62" Cameron Type 8
1— 72" Cameron Type 9-5

30" Maximum Rewind Diameter
1— 42" Essex Duplex Shear Cut; A-F Brng
1— 42" Cameron Type 28-3 duplex
1— 60" Langston Shear Cut
1— 62" Cameron Type 6
1— 72" Cameron Type 10; A-F Brng
1— 72" Cameron Type 10 Shear Cut; A-F Brng
1— 92" Cameron Type 28-3 Duplex w/Vari-Drive

36" Maximum Rewind Diameter
1— 62" Cameron Type 8
1— 70" Variable Speed Center Winder
1— 72" Cameron Type 10; A-F Brng

42" Maximum Rewind Diameter
1— 40" Egan Shear Cut; A-F Brng
1— 60" Kidder Model SH Low Bed
1— 72" Beloit Shear Cut
1— 82" Langston Shear Cut; A-F Brng
1— 92" B & S; A-F Brng
1—136" Cameron Type 18; A-F Brng

48" Maximum Rewind Diameter
1— 86" M & W Four Drum Shear Cut
1—114" Langston
1—152" Langston Shear Cut

60" Maximum Rewind Diameter
1—110" Cameron Type 18 w/Motor Drive
1—120" M & W two drum w/75 h.p. drive
1—136" Langston Type DA Shear Cut; A-F

**STOCK CLEANERS**

2—1000 g.p.m. Shartle Hydrafuges w/motors
14—Bird Dirtecs; 2" & 6" bronze
1—Bird Dirtec 12". Rebuilt by Bird

**SUPERCALENDERS**

2— 30" Norwood 4 roll
1— 63" Norwood 8 roll; A-F Brng
1— 65" Norwood 8 roll; A-F Brng
1— 92" Norwood 7 roll w/drive

**SUCTION EXTRACTOR ROLL—DOWNINGTOWN**

1—105" face x 19" dia.

**TRIMMERS—POWER BACK GAUGES**

2— 38" Seybold w/motors
1— 57" Seybold Precision
3— 65", 74", & 84" Seybold Daytons
1—84" Seybold 12Z w/air tables

**VACUUM PUMPS**

7—H-4, ½H-5, & H-5 Nash
2—K-4 & K-7 (new) Nash
3—L-5 & L-7 Nash
4—#2, #3, #4, #6 & #7 Nash Hytors
1—8 x 10 Connersville
2—MD-2 Nash w/motors; new laboratory models
1—L-6 Nash w/40 h.p. motor

**YANKEE DRYERS**

1—132" face x 10' dia Beloit; 35 psi

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Your inquiry will be handled in the most confidential and professional manner.

Our Research and Development personnel have been informed about the placement of this ad. Reply Box 60-41 care Paper Trade Journal.

M-14

## STAFF ENGINEER

Engineering - construction company active in design and construction of pulp and paper mills seeks a qualified engineer to add to its Pulp and Paper Staff Engineering group. Duties involve providing technical advice to engineering department and working with customers on mill design. Permanent position in home office.

Applicant should be graduate engineer, preferably in chemical or mechanical engineering, with 10 years experience in pulp and paper field.

Please send resume of experience to:

**Buell Whitehill, Jr.**
**Director of Personnel**
**The Rust Engineering Co.**
**930 Fort Duquesne Boulevard**
**Pittsburgh 22, Pennsylvania** M-7

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F-22

### WANTED

A Turbine Operator for a Municipal Power Plant with 9,500 K.W. generating capacity. We are interested in a man with a good background in steam engineering. Address Box 60-31 care Paper Trade Journal.

F-22

## ENGINEER

We have an opening for a graduate chemical or mechanical engineer with fibreboard or pulp and paper experience to assist supervising project engineer in all phases of engineering on insulation board and similar products. Work will include cost estimates for new plants, design, plant problems, etc. Some travel will be required.

*Write to Personnel Manager*

**BARRETT DIVISION**

**ALLIED CHEMICAL CORP.**

*40 Rector Street*
*New York 6, N. Y.*

F-22

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